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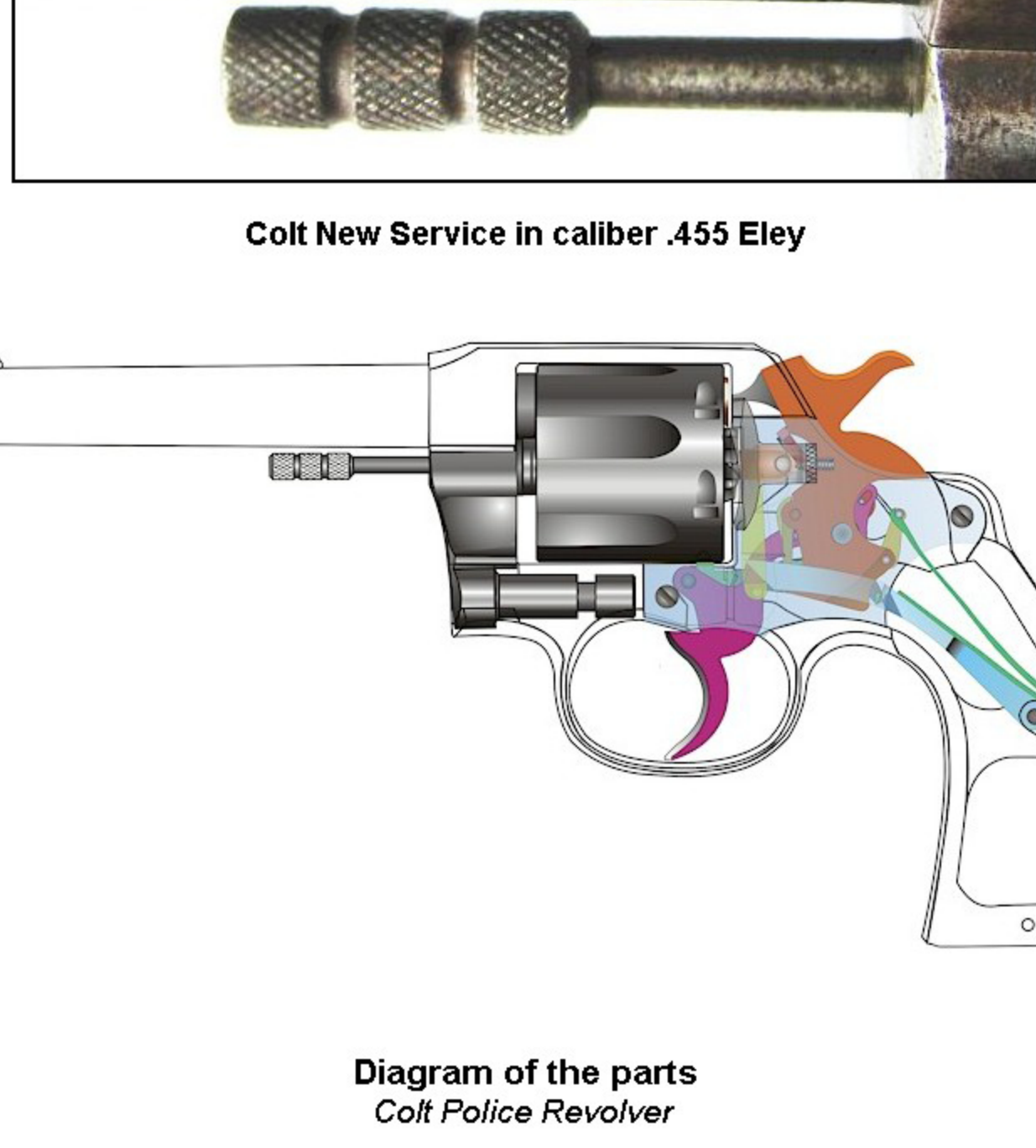
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Dismounting of the Colt New Service revolver (I)



Colt New Service in caliber .455 Eley

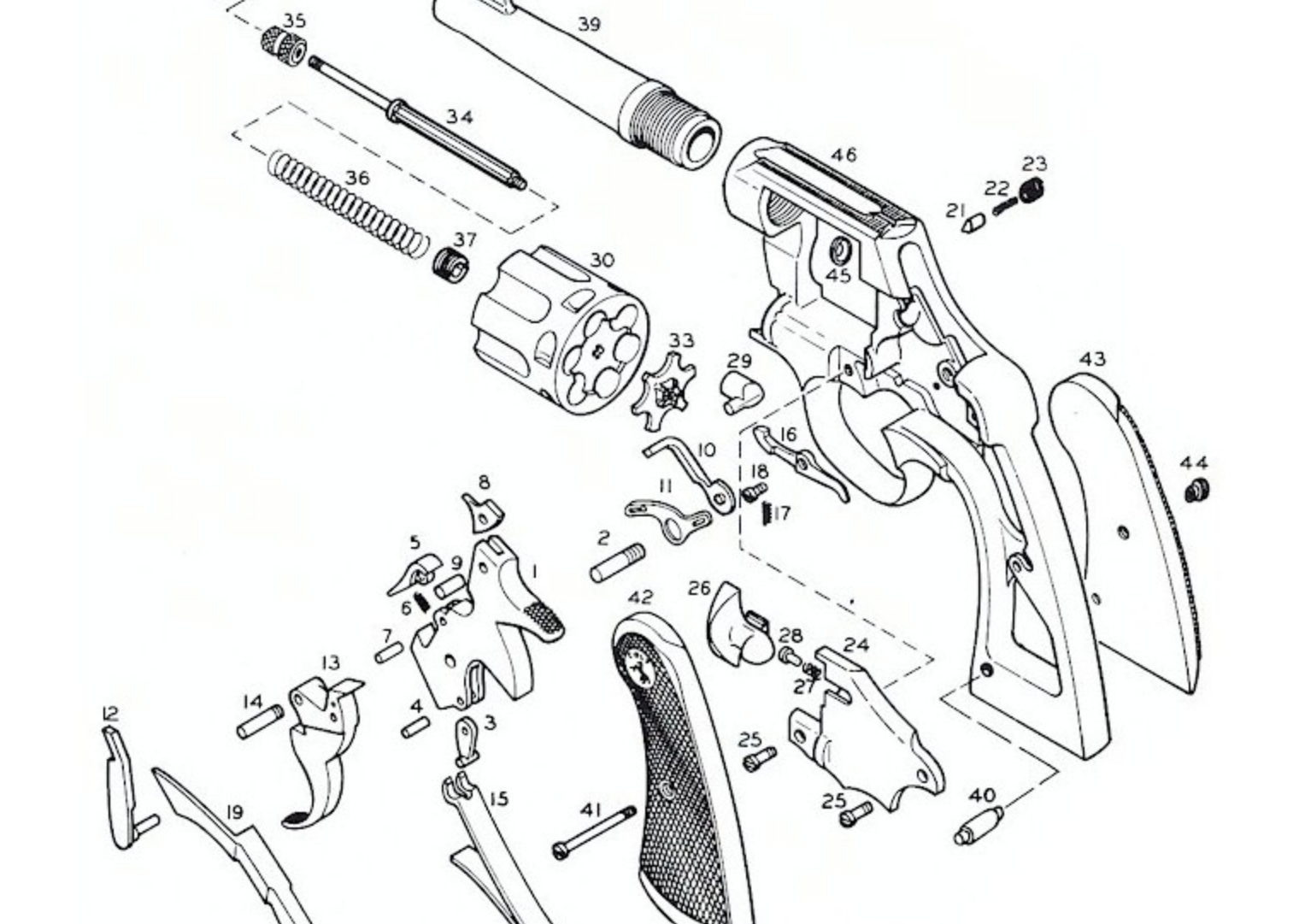
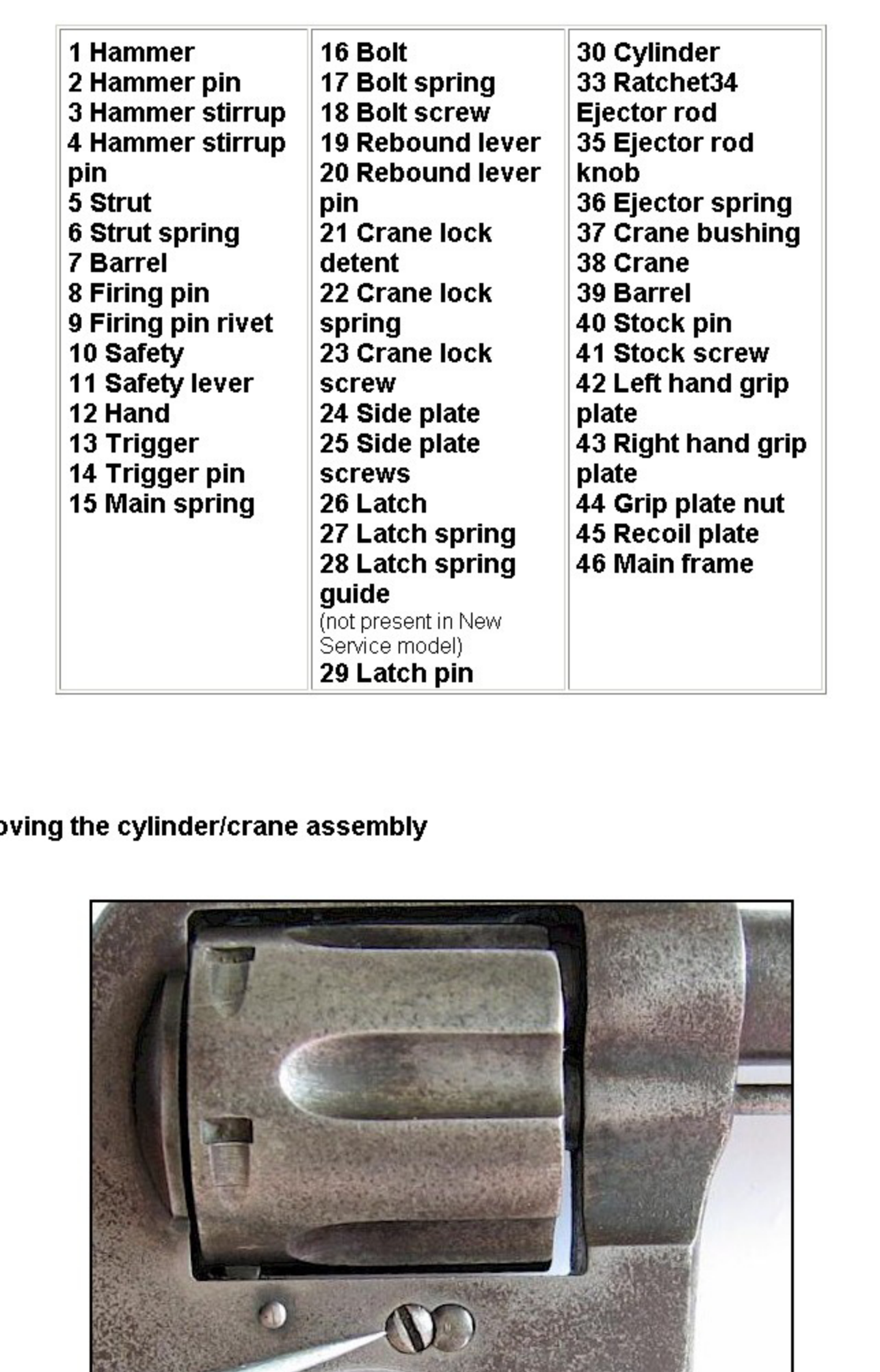
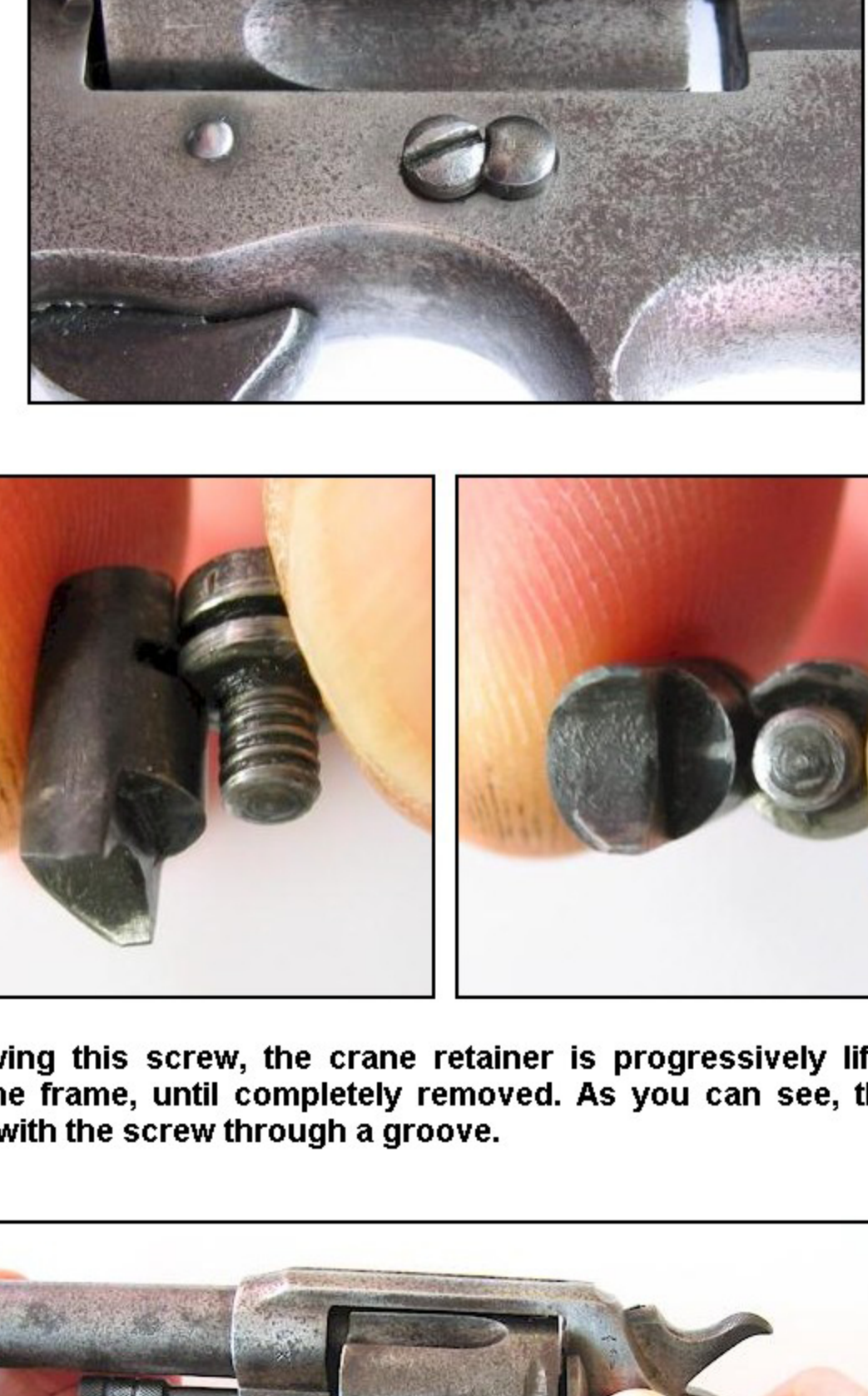


Diagram of the parts
Colt Police Revolver



1 Hammer	16 Bolt	30 Cylinder
2 Hammer pin	17 Bolt spring	33 Ratchet
3 Hammer stirrup	18 Bolt screw	34 Ejector rod
4 Hammer stirrup pin	19 Rebound lever	35 Ejector rod knob
5 Strut	20 Rebound lever pin	36 Ejector spring
6 Strut spring	21 Crane lock detent	37 Crane bushing
7 Barrel	22 Crane lock spring	38 Crane
8 Firing pin	23 Crane lock screw	39 Barrel
9 Firing pin rivet	24 Side plate	40 Stock pin
10 Safety	25 Side plate screws	41 Stock screw
11 Safety lever	26 Latch	42 Left hand grip plate
12 Hand	27 Latch spring	43 Right hand grip plate
13 Trigger	28 Latch spring guide	44 Grip plate nut
14 Trigger pin	29 Latch pin	45 Recoil plate
15 Main spring		46 Main frame

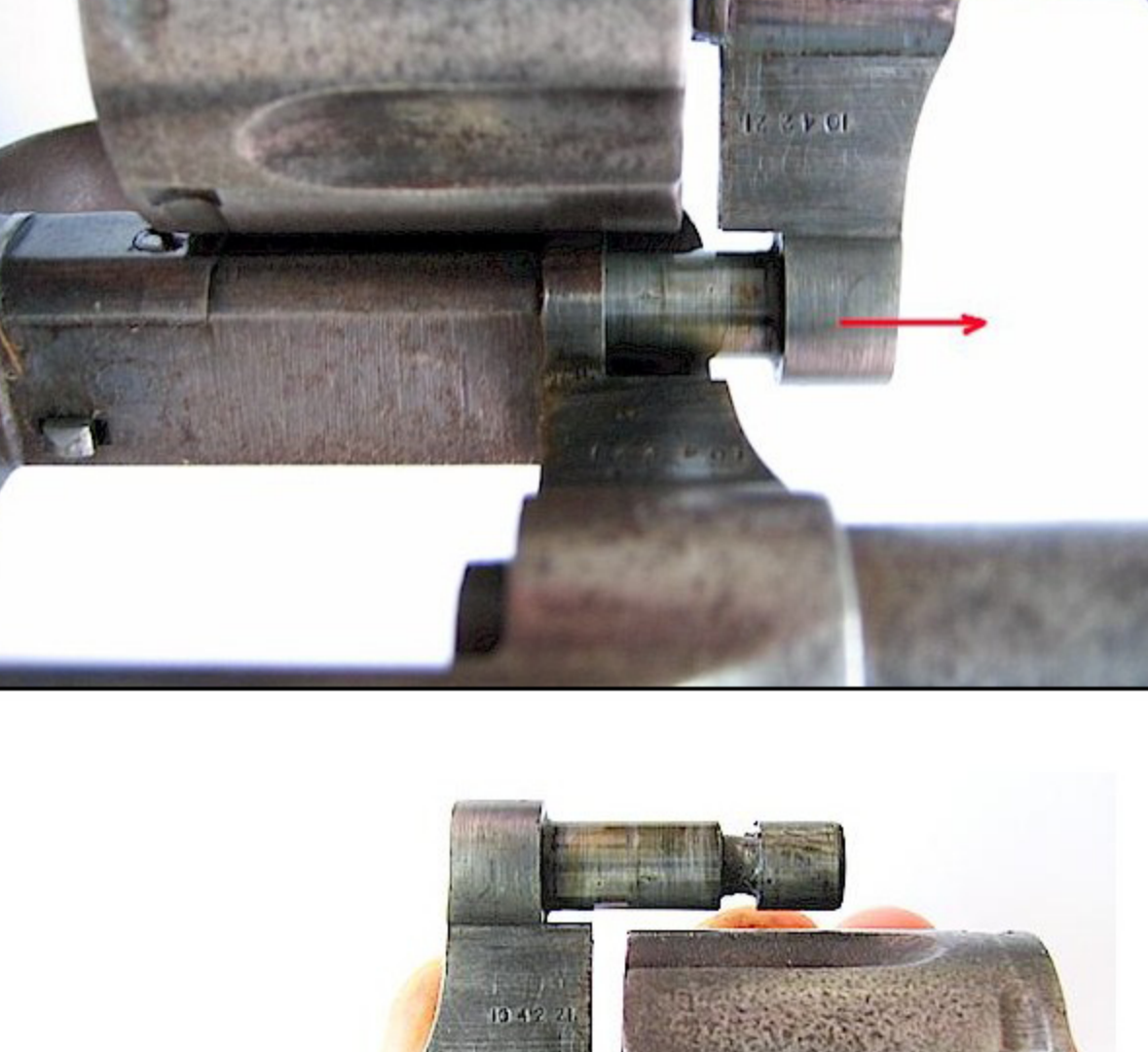
- Removing the cylinder/crane assembly



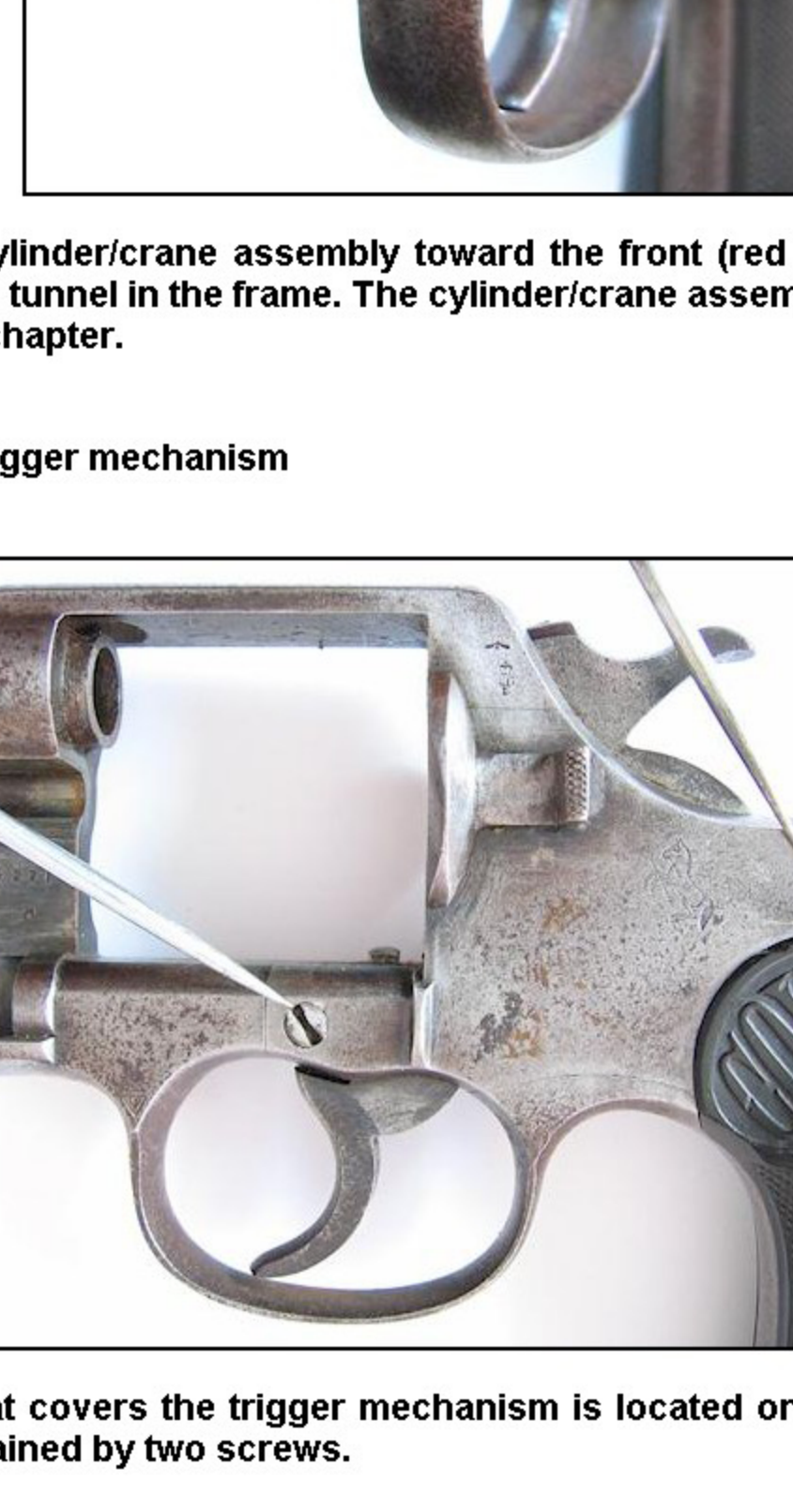
The crane retainer is located on the right side of the frame, under the cylinder. The retainer is loosely attached and maintained by a screw.



On unscrewing this screw, the crane retainer is progressively lifted out of its recess in the frame, until completely removed. As you can see, the retainer is interlocked with the screw through a groove.



Let the cylinder drop out of the frame, by pulling the cylinder latch located on the left side of the frame toward the rear.



Pull the whole cylinder/crane assembly toward the front (red arrow above), and remove it from its tunnel in the frame. The cylinder/crane assembly will be stripped further in a next chapter.

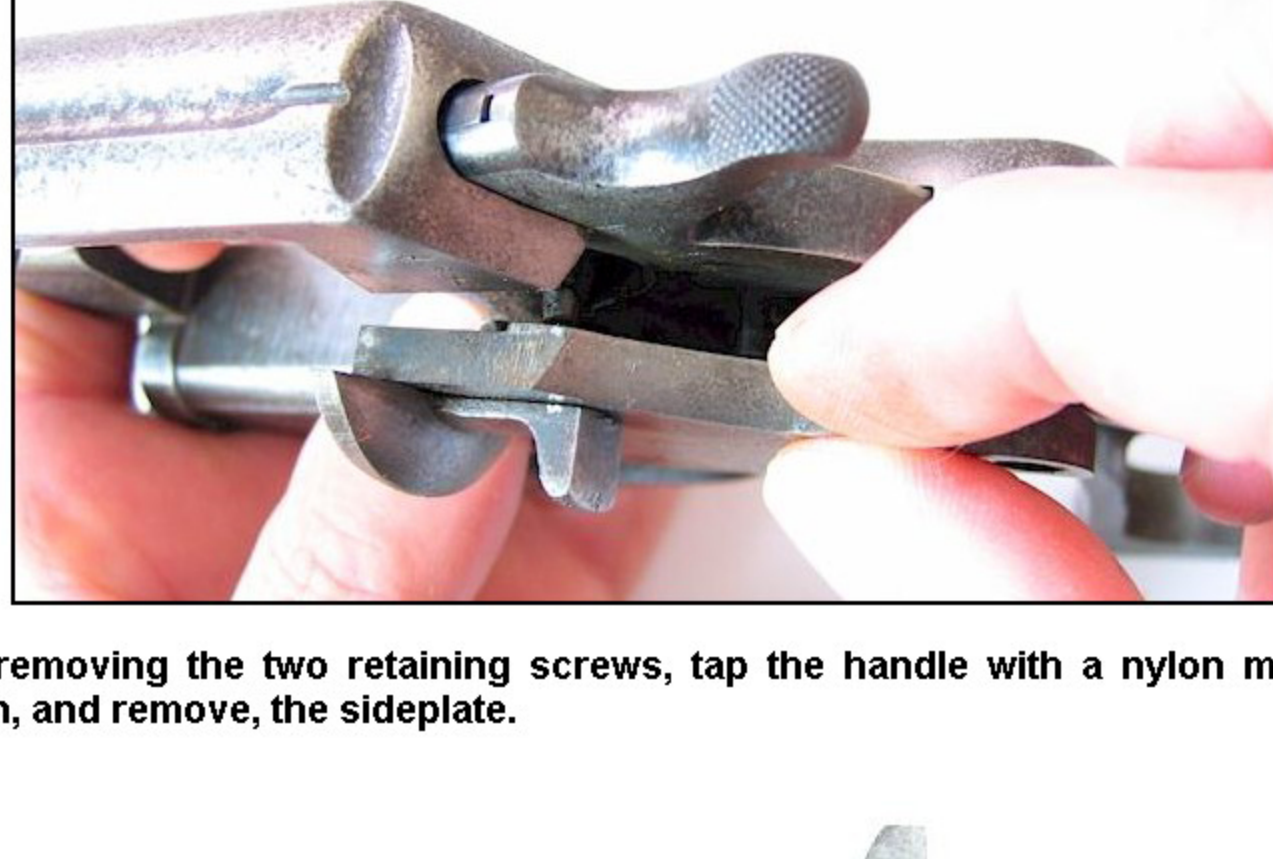
- Access to the trigger mechanism



The sideplate that covers the trigger mechanism is located on the left side of the frame, and maintained by two screws.



Before dismantling the protective sideplate to access the trigger mechanism, remove the grip plates to the unique retaining screw that goes through the gun handle.



After removing the two retaining screws, tap the handle with a nylon mallet to loosen, and remove, the sideplate.



Internal face of the sideplate



The sideplate come with two other parts: the cylinder latch and its return coil spring. The cylinder latch can be pulled forward out of the sideplate.

Dismounting of the Colt New Service revolver (II)



Trigger mechanism shown after removal of the sideplate and grip plates

- Dismounting the main spring



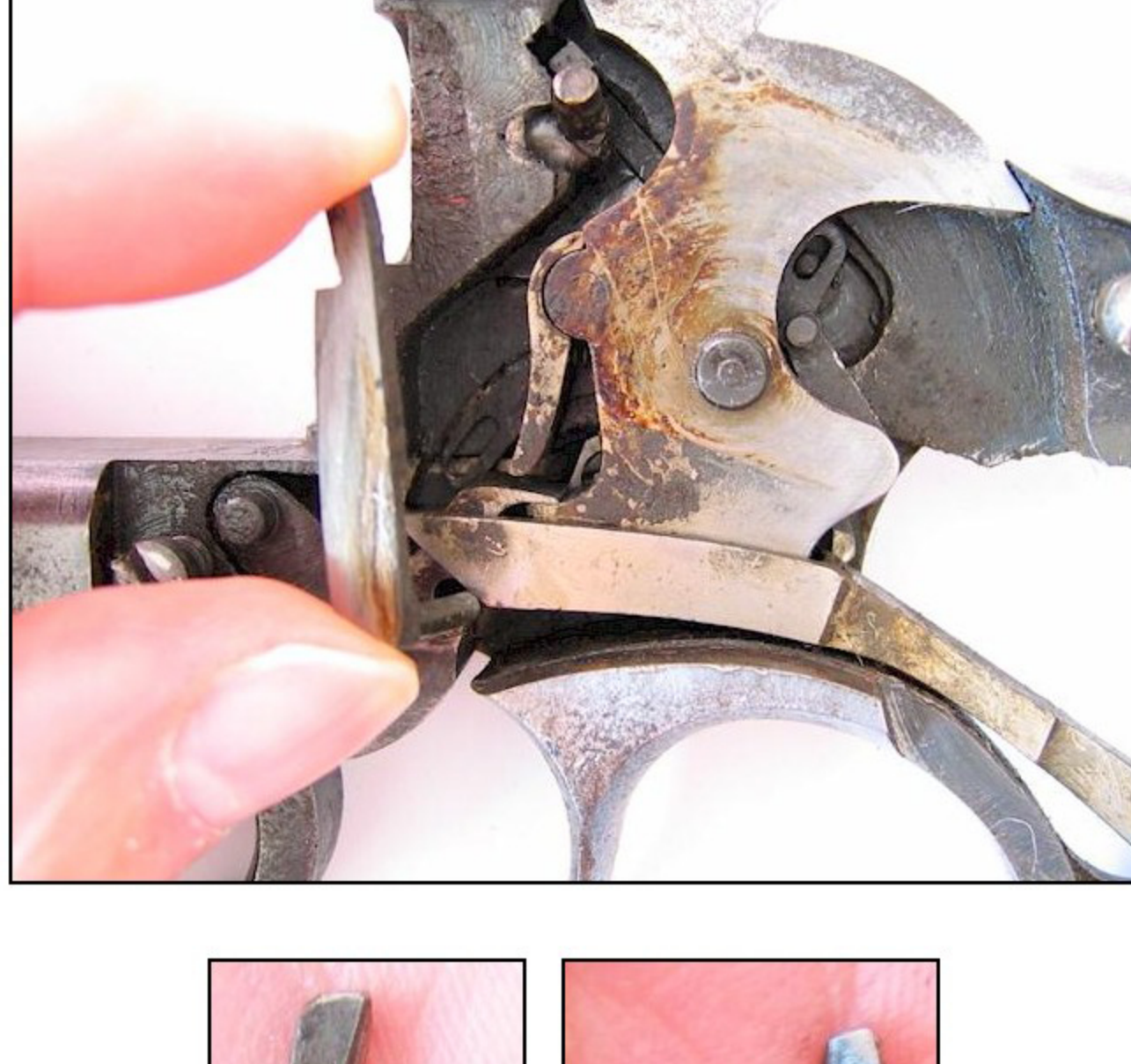
Using smooth-jawed pliers, grip the main spring and detach its upper-arm hook from the hammer stirrup.



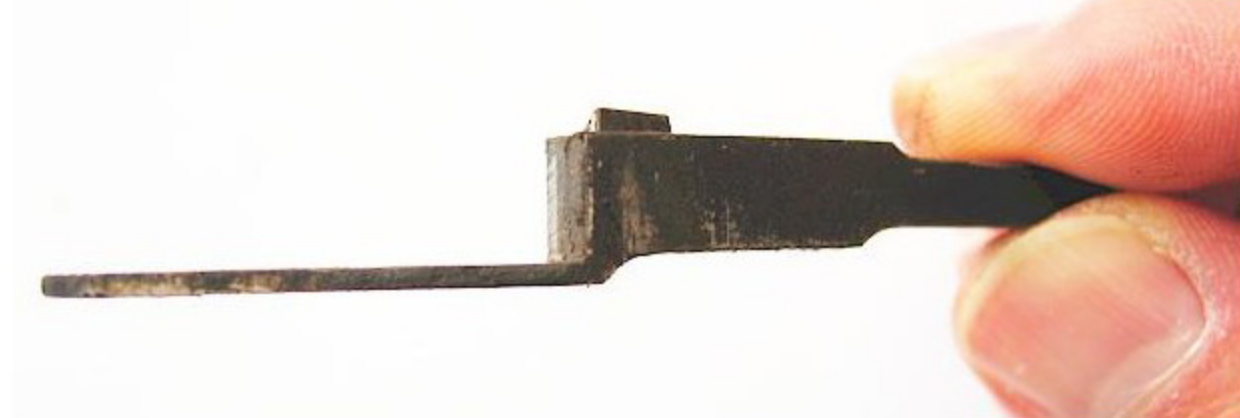
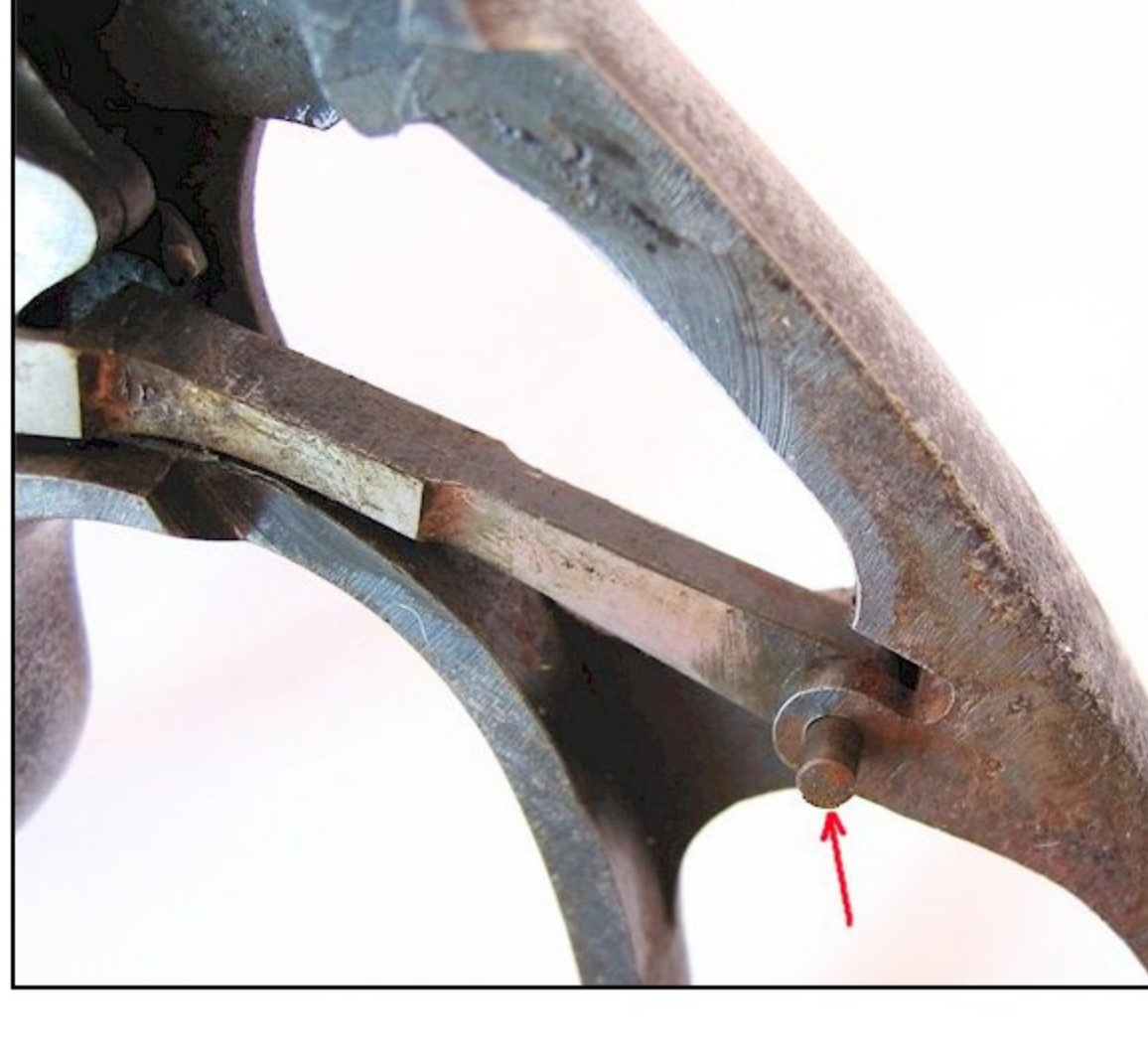
Main spring removed

Using a punch, drive the main spring from the right side of the frame until sufficiently raised above the left side of the grip frame, then lift it off using pliers.

- Dismounting the rebound lever

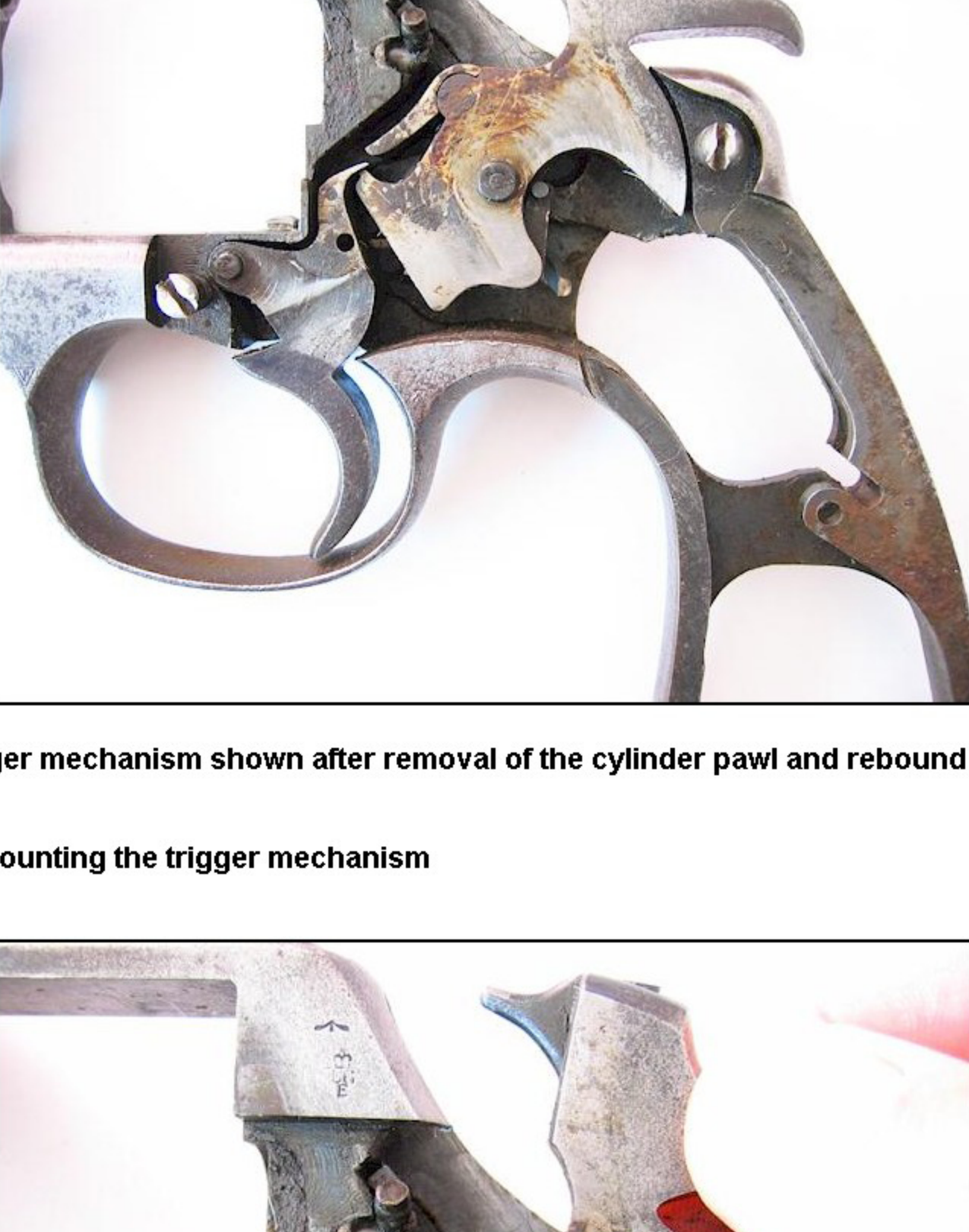


Detach the cylinder hand from the trigger. The cylinder hand is loosely attached by its integral pivot pin going through a hole in the trigger.



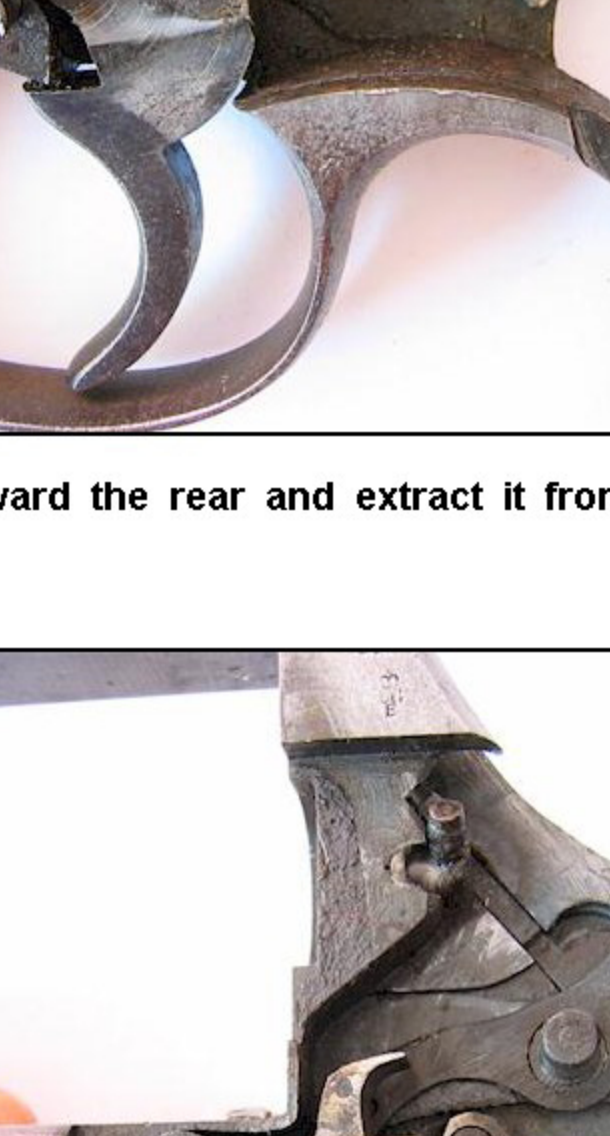
Drift out the large pin at the center of the grip frame to release the rebound lever. Pull the rebound lever toward the front out of its recess in the frame, and remove it.

Dismounting of the Colt New Service revolver (III)

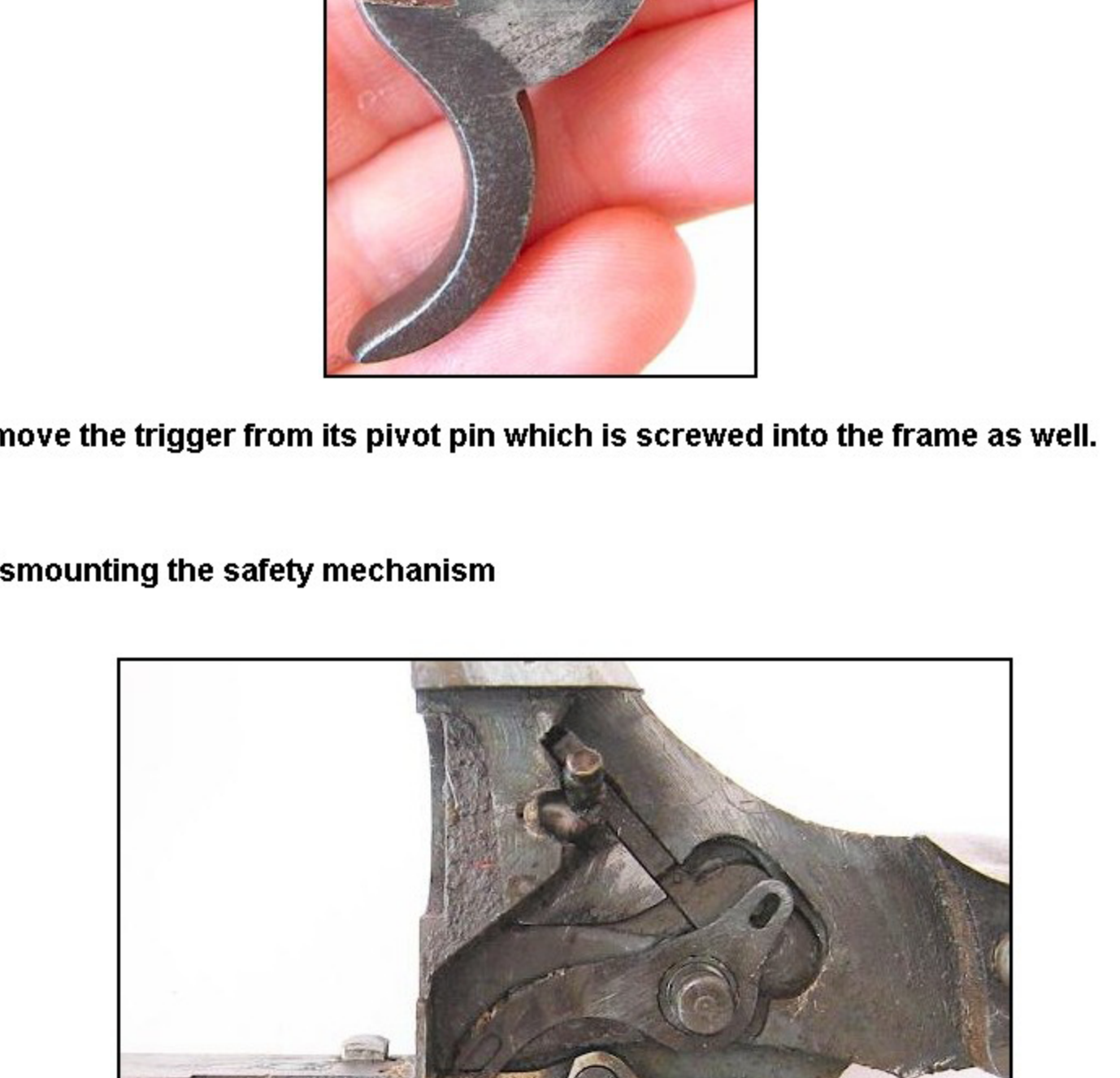


Trigger mechanism shown after removal of the cylinder pawl and rebound lever

- Dismounting the trigger mechanism



Rotate the hammer toward the rear and extract it from its pivot pin, which is screwed into the frame.



Remove the trigger from its pivot pin which is screwed into the frame as well.

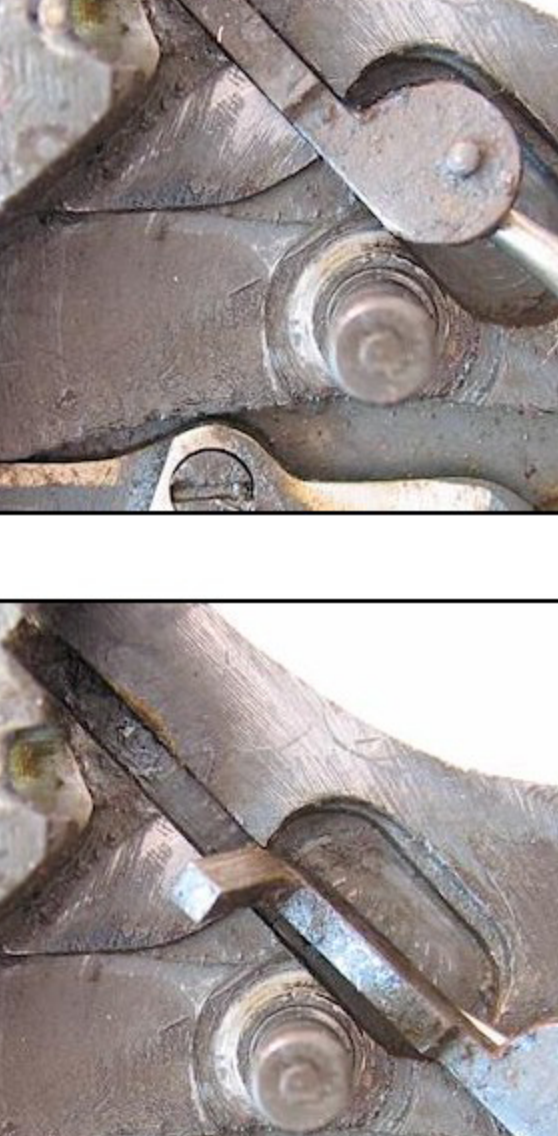
- Dismounting the safety mechanism



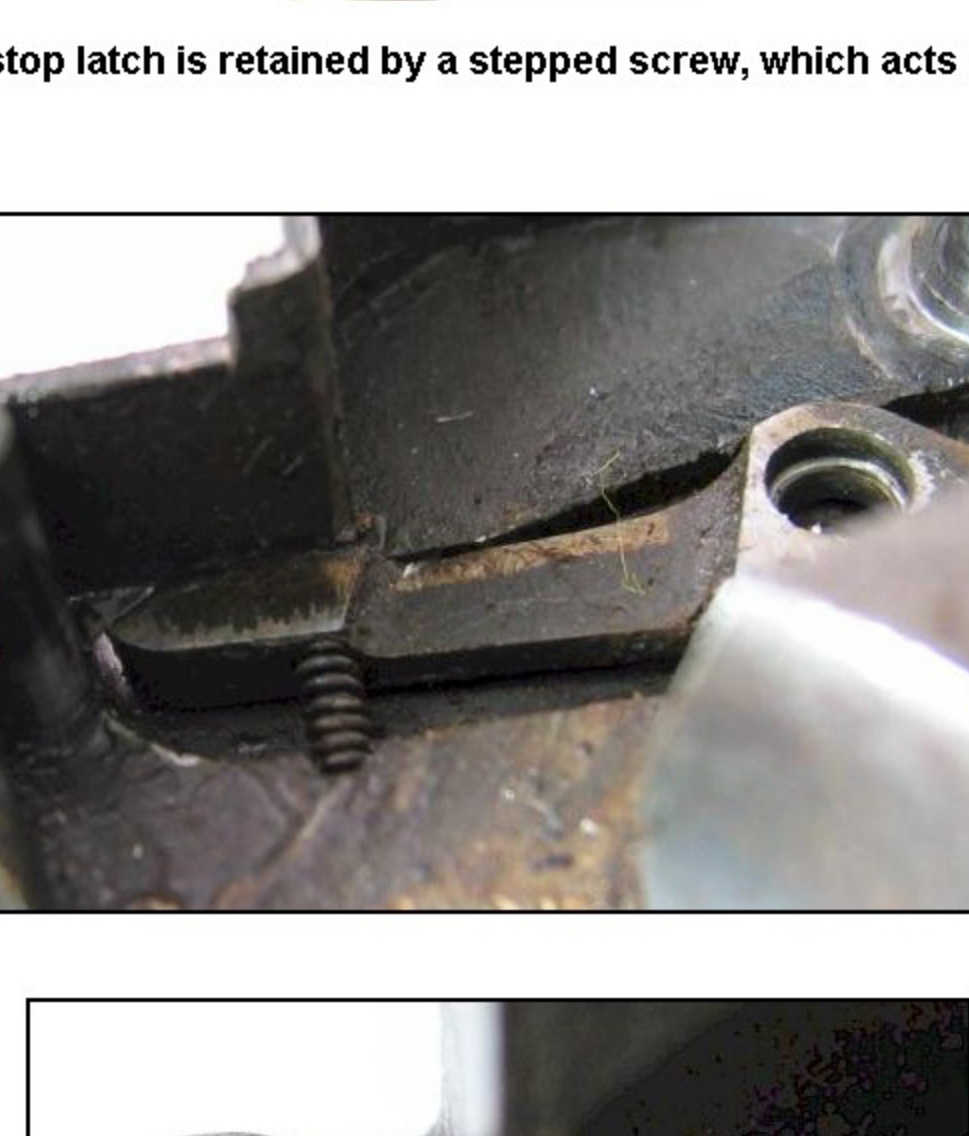
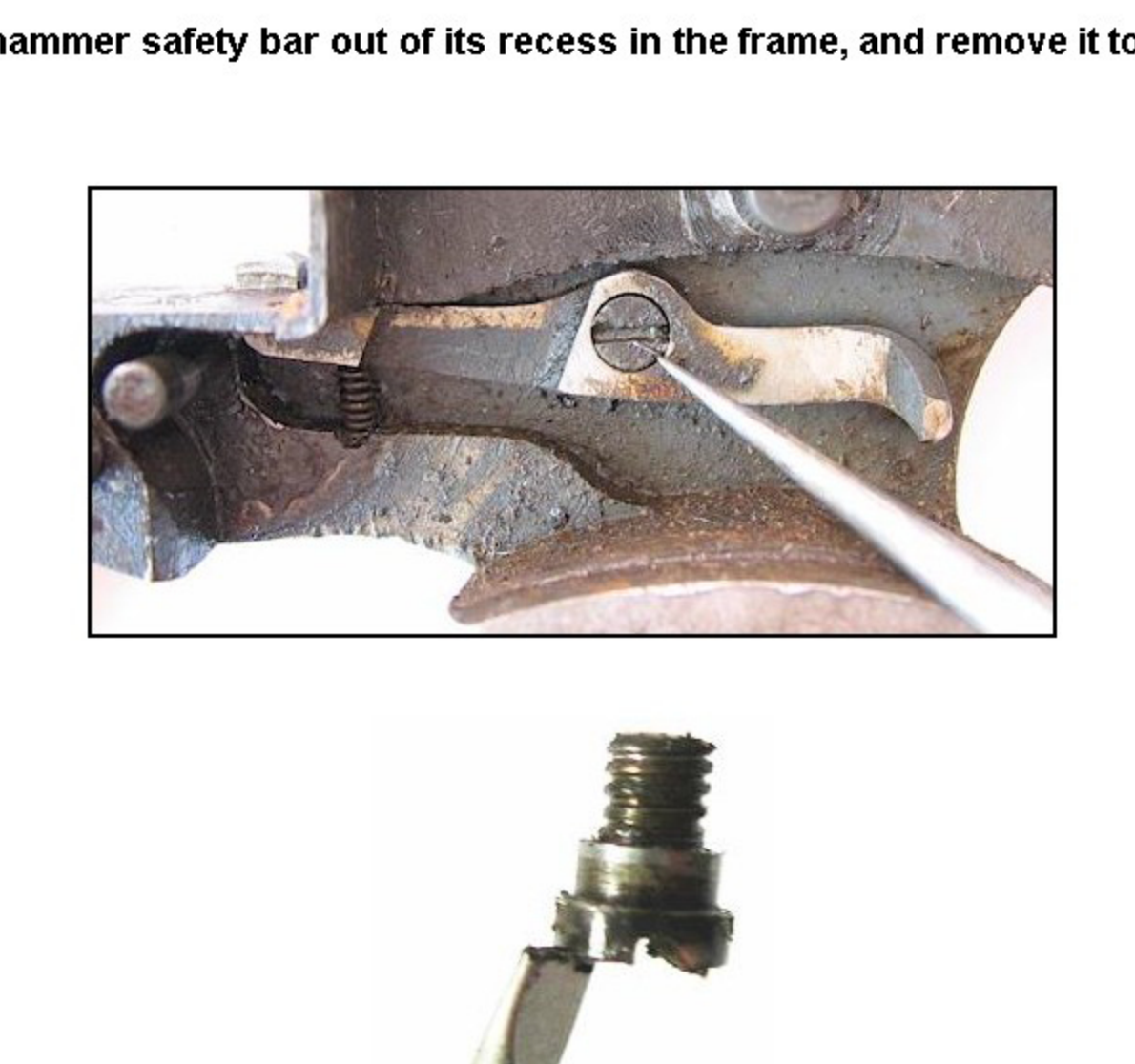
The remaining parts inside the frame relate all to the gun safety. That is the cylinder lock and the hammer safety.



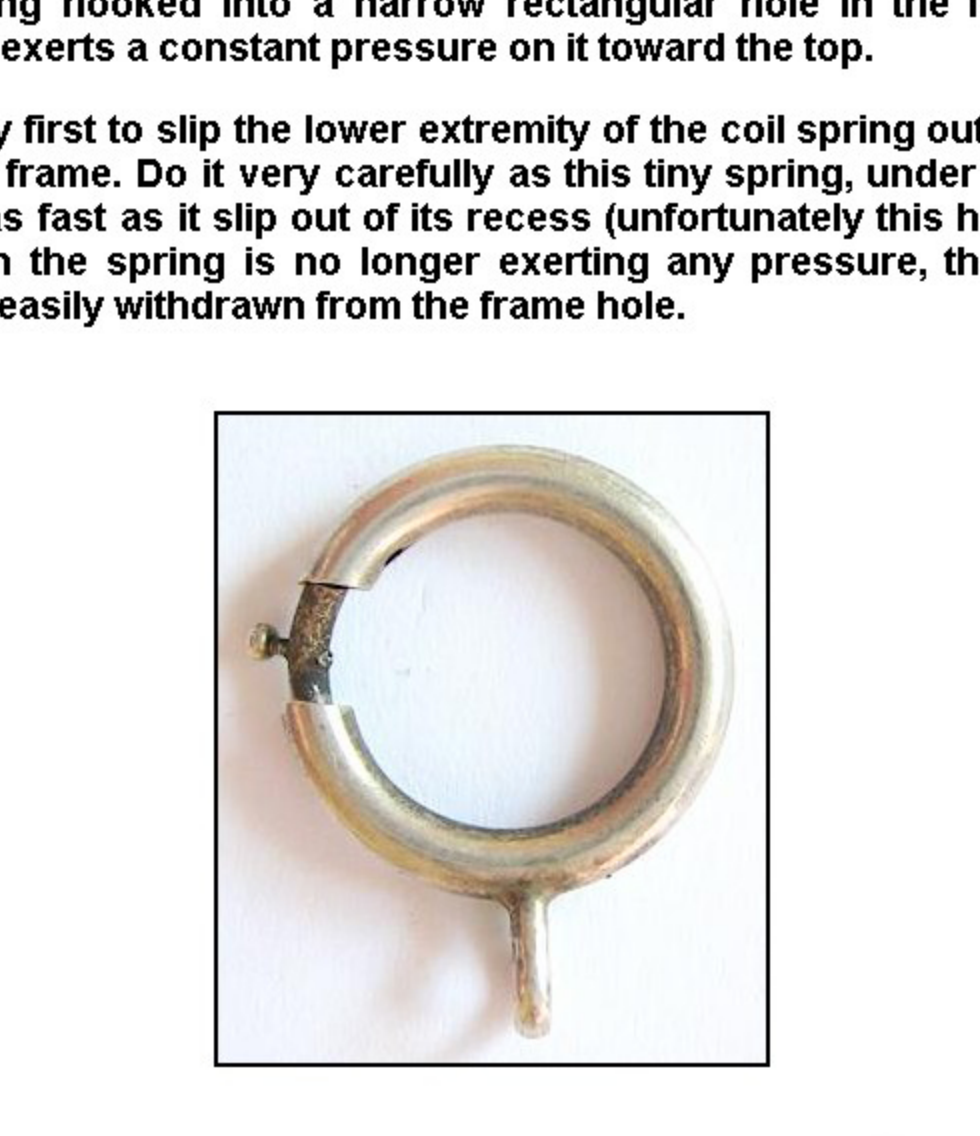
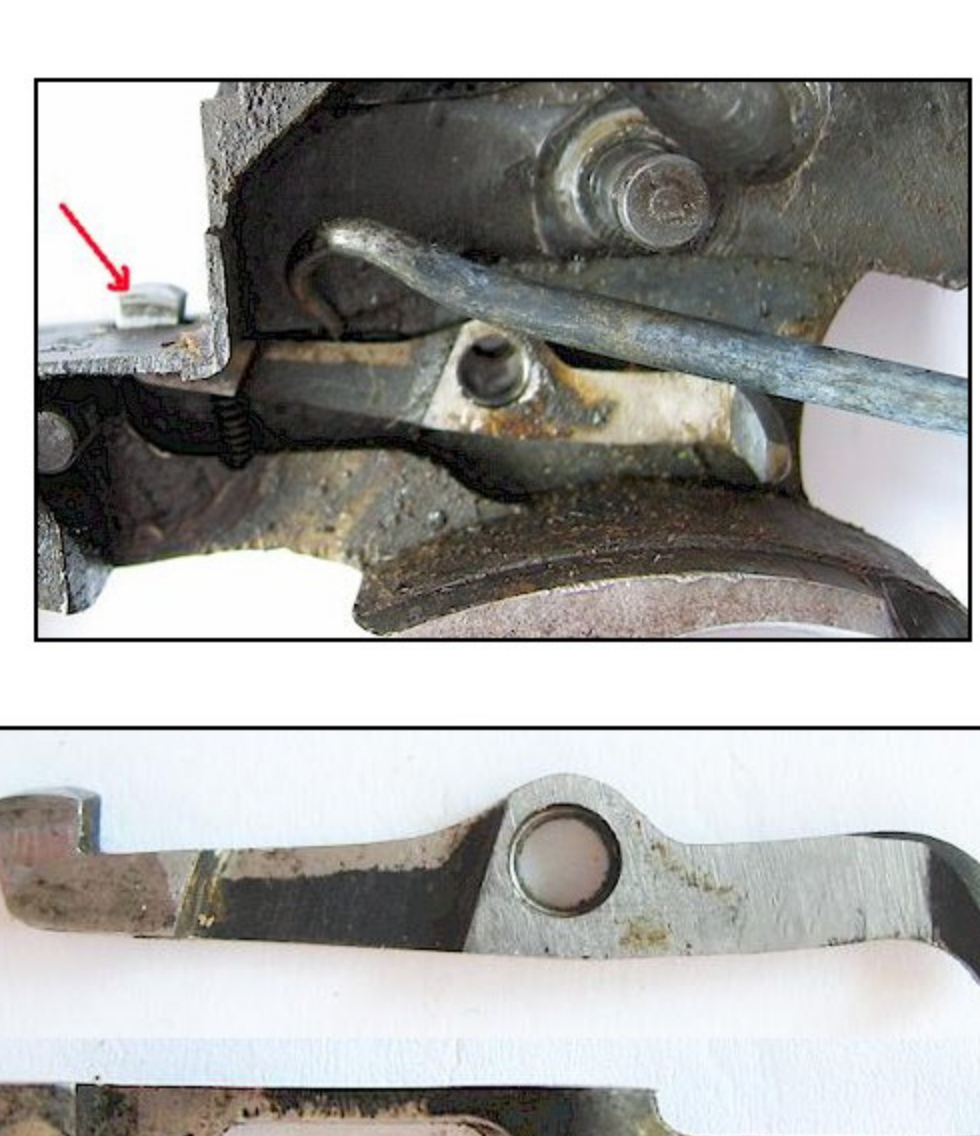
Cylinder bolt



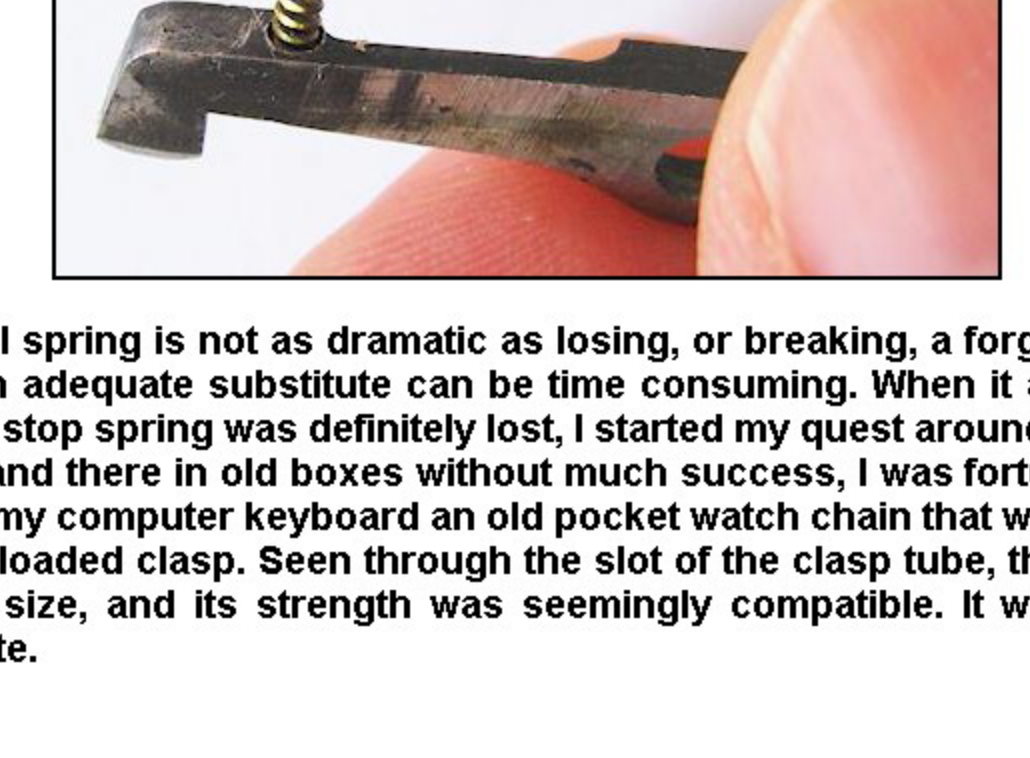
The cylinder bolt goes through the frame, and emerges on the breech face. Pull it toward the rear by its lateral stud, and remove it.



The hammer safety lever shares the same pivot pin with the hammer. Pry it out of its recess and remove it.



Lift the hammer safety bar out of its recess in the frame, and remove it toward the rear.



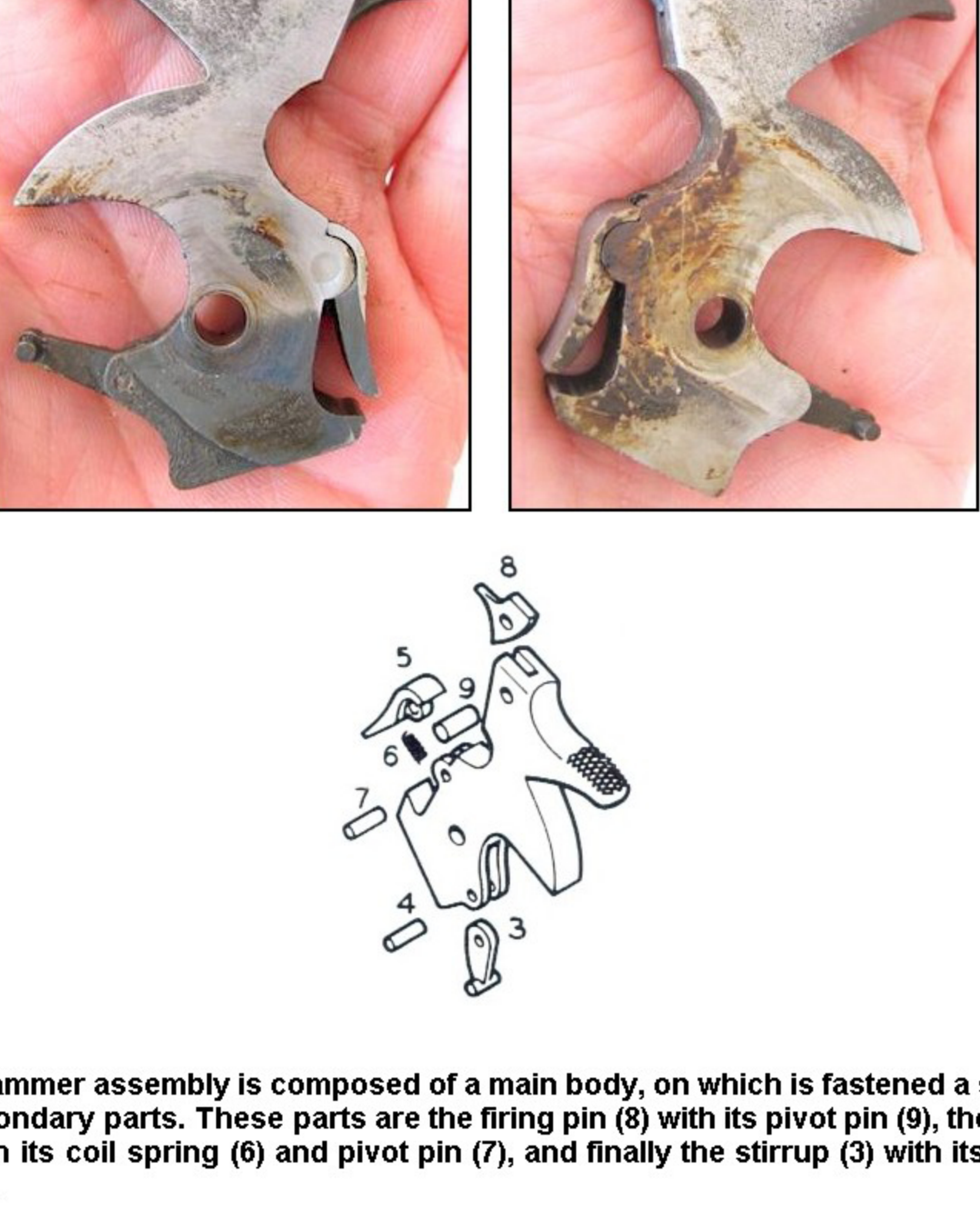
The removal of the cylinder stop latch is not that easy because of its forward extremity being hooked into a narrow rectangular hole in the frame, while its return spring exerts a constant pressure on it toward the top.

Better is to try first to slip the lower extremity of the coil spring out of its retaining recess in the frame. Do it very carefully as this tiny spring, under heavy tension, may be lost as fast as it slip out of its recess (unfortunately this happened to the author). When the spring is no longer exerting any pressure, the locking latch may be more easily withdrawn from the frame hole.

Losing a coil spring is not as dramatic as losing, or breaking, a forged piece. But to search an adequate substitute can be time consuming. When it appeared that the cylinder stop spring was definitely lost, I started my quest around. Finally, after going here and there in old boxes without much success, I was fortunate enough to find near my computer keyboard an old pocket watch chain that was terminated by a spring loaded clasp. Seen through the slot of the clasp tube, the spring was of the right size, and its strength was seemingly compatible. It was enough to change is fate.

Dismounting of the Colt New Service revolver (IV)

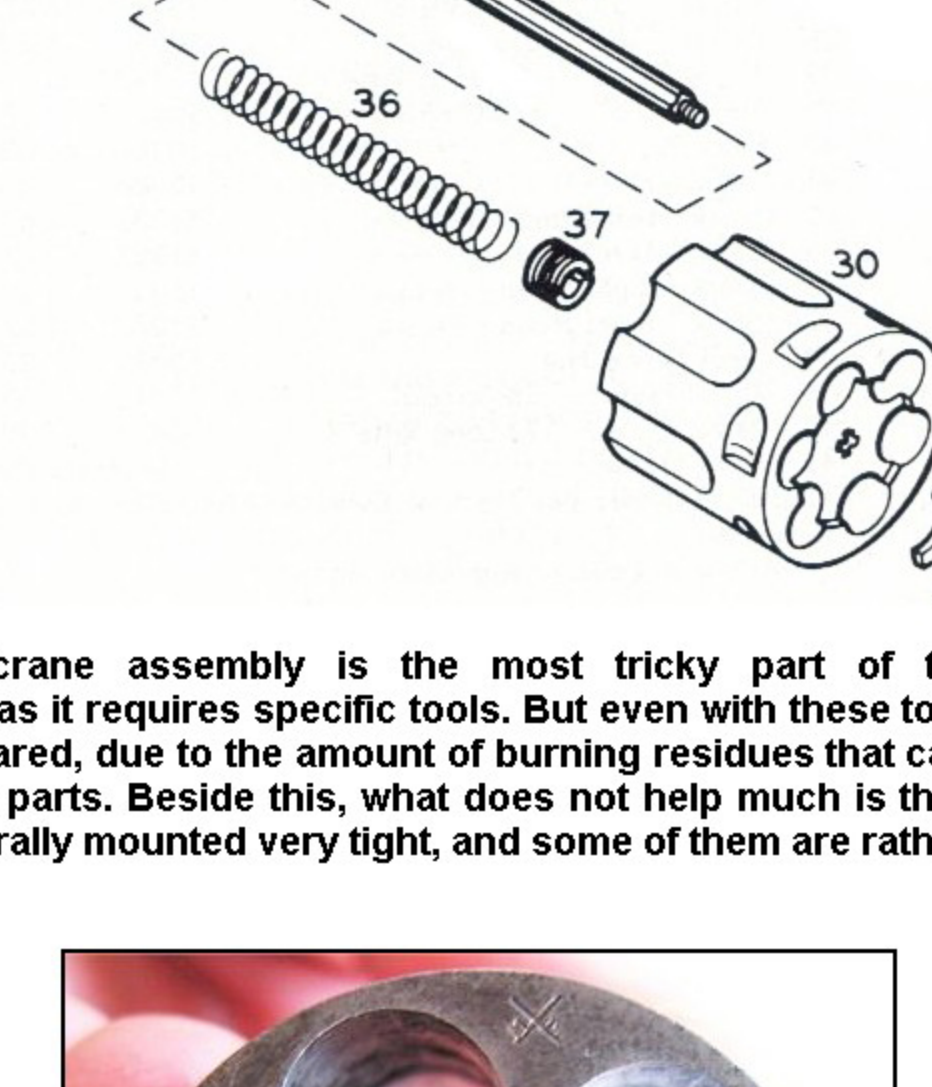
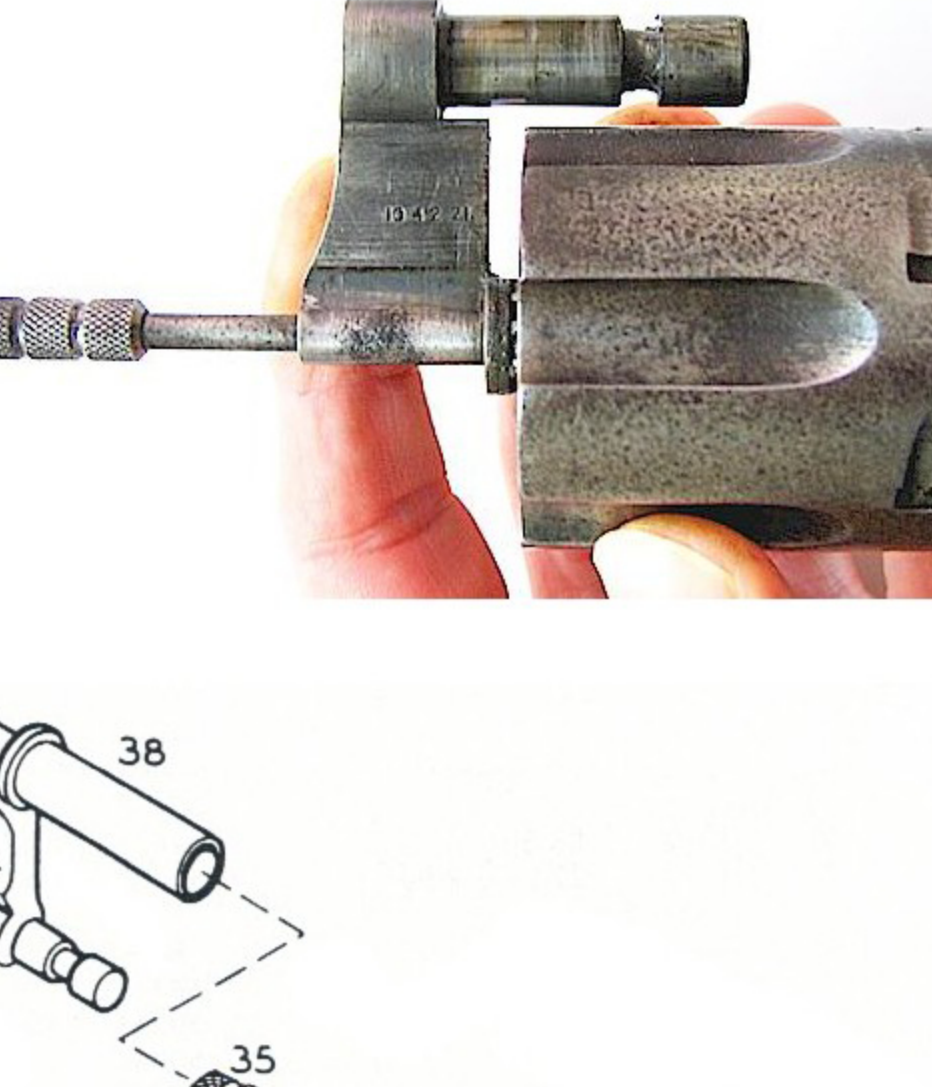
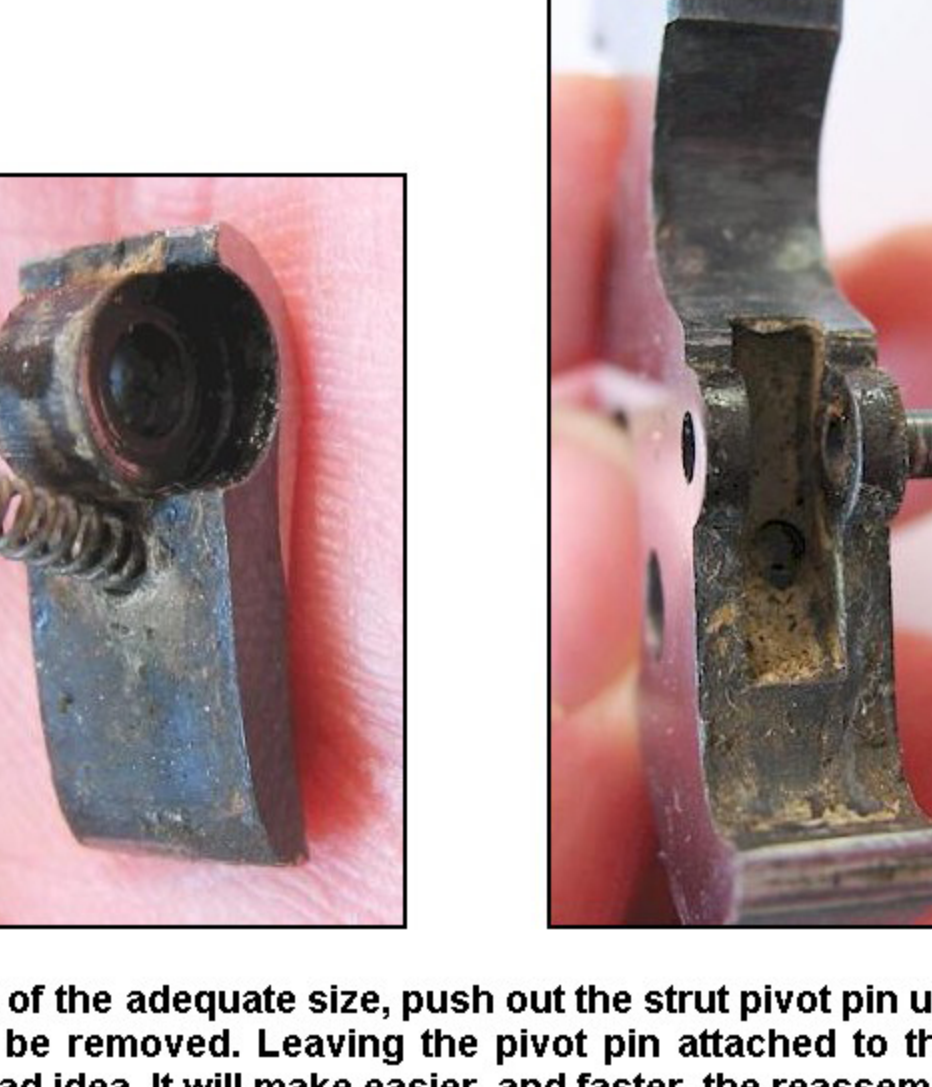
- Dismounting the hammer assembly



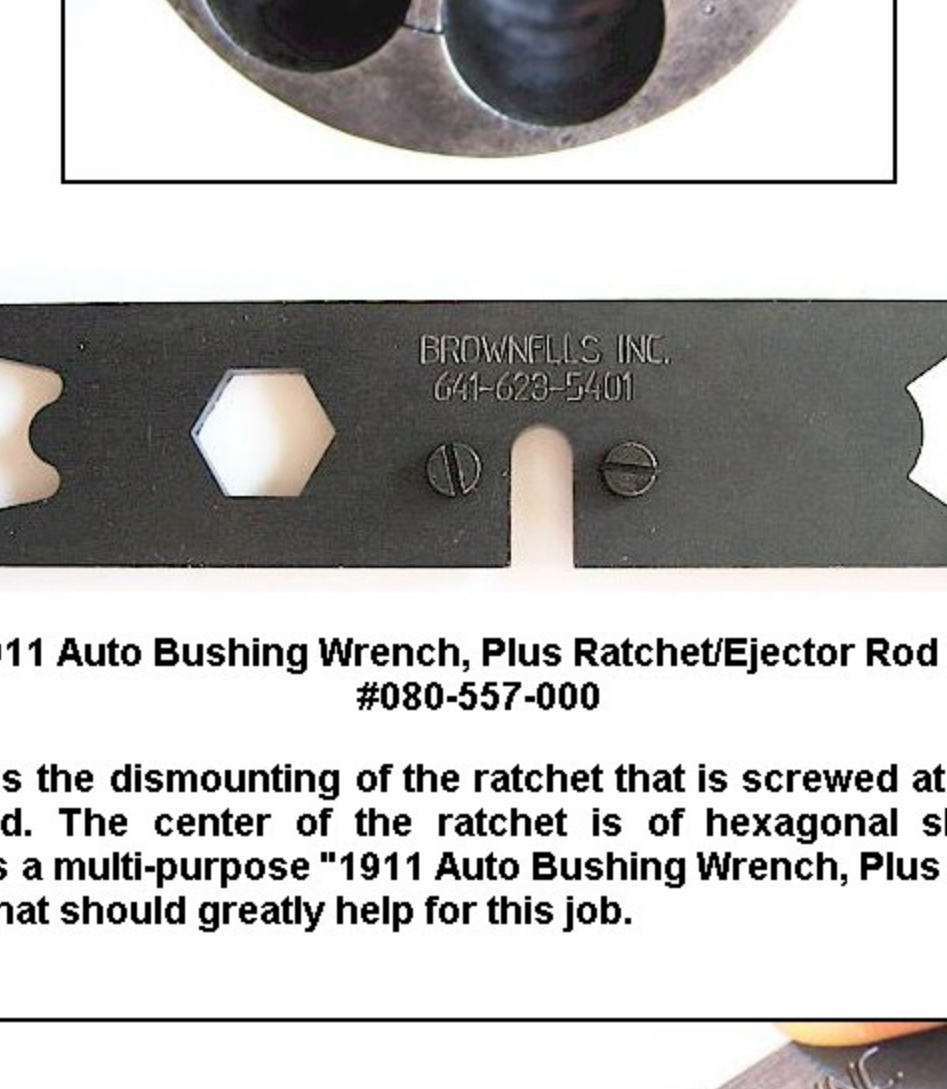
The hammer assembly is composed of a main body, on which is fastened a series of secondary parts. These parts are the firing pin (8) with its pivot pin (9), the strut (5) with its coil spring (6) and pivot pin (7), and finally the stirrup (3) with its pivot pin (4).



As you can see on the picture above, the pivot pin - which is installed as a rivet - of the firing pin was rendered totally invisible by the metal finishing of the hammer's head. In those conditions it is highly recommended to not try to remove the firing pin if not of absolute necessity.

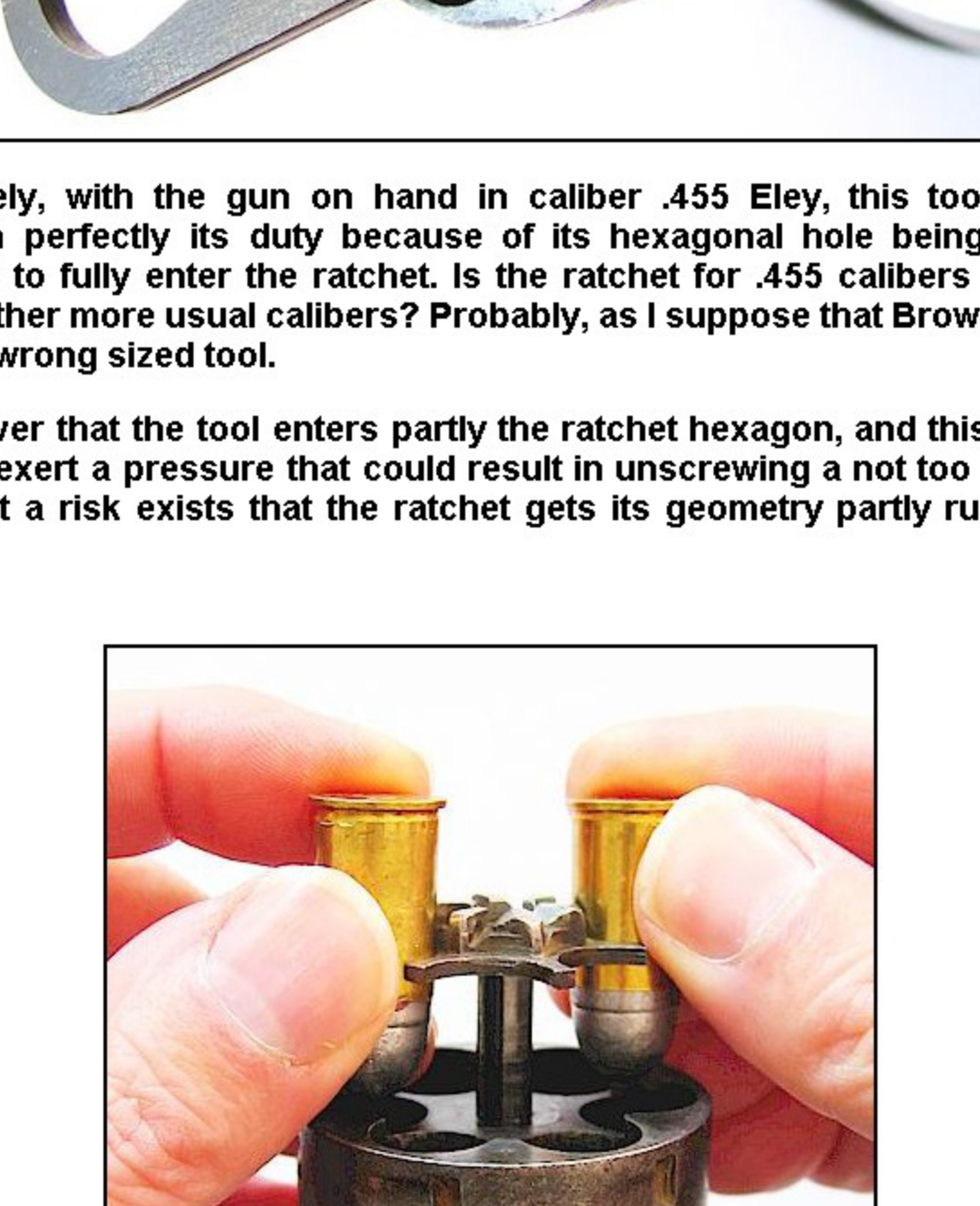


Using a punch of the adequate size, push out the strut pivot pin until the strut and its spring can be removed. Leaving the pivot pin attached to the hammer main body is not a bad idea. It will make easier, and faster, the reassembling.

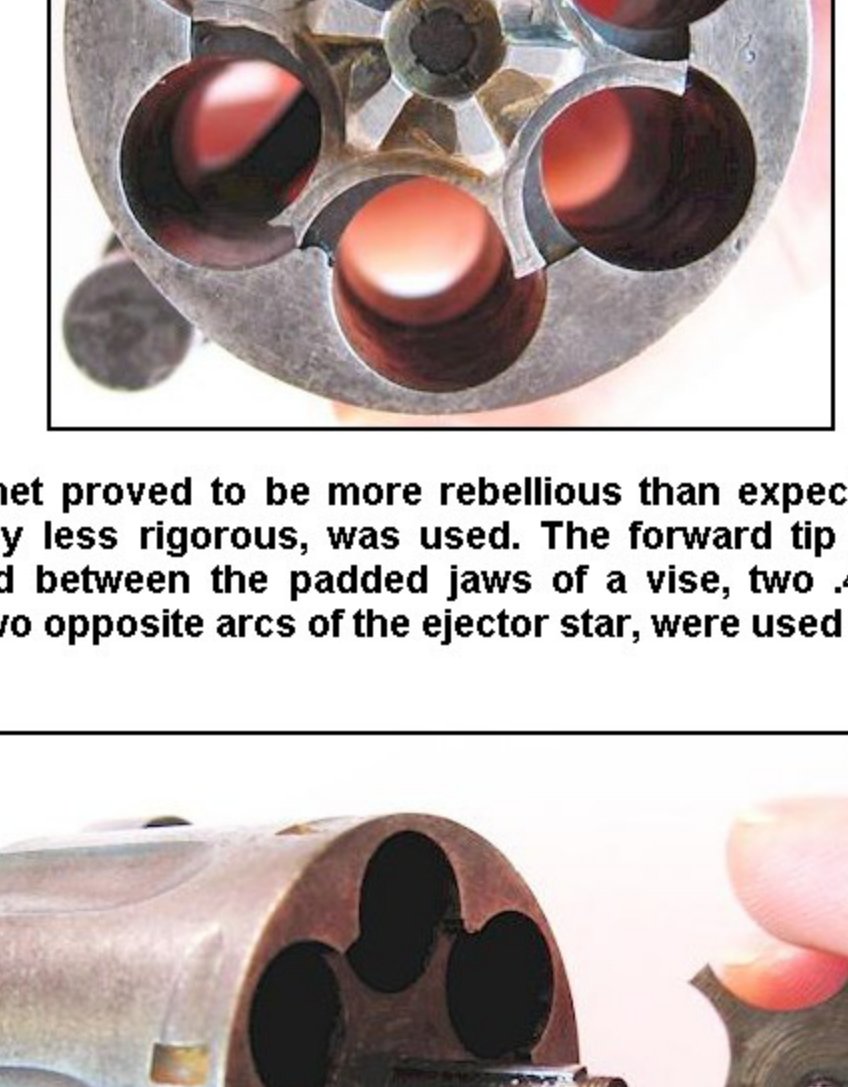


As you can see in the picture above, the pivot pin of the hammer stirrup is barely visible because of the fine metal finishing. In this case, as for the firing pin, it is not advisable to dismount the stirrup if not of absolute necessity.

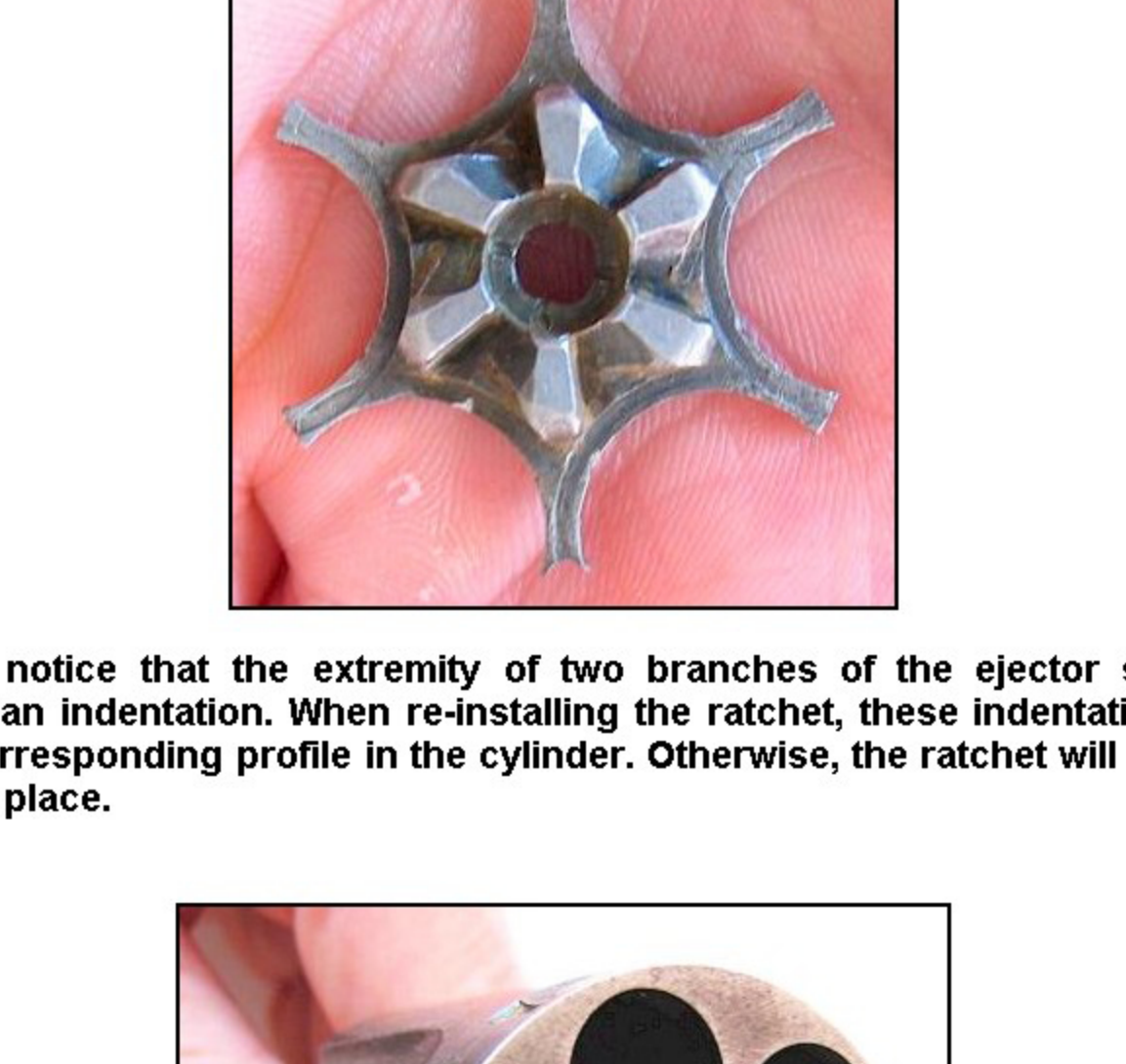
- Dismounting the cylinder/crane assembly



The cylinder/crane assembly is the most tricky part of the gun to be disassembled as it requires specific tools. But even with these tools on hand, the path is not cleared, due to the amount of burning residues that can have clogged the removable parts. Beside this, what does not help much is the fact that these parts are generally mounted very tight, and some of them are rather fragile.

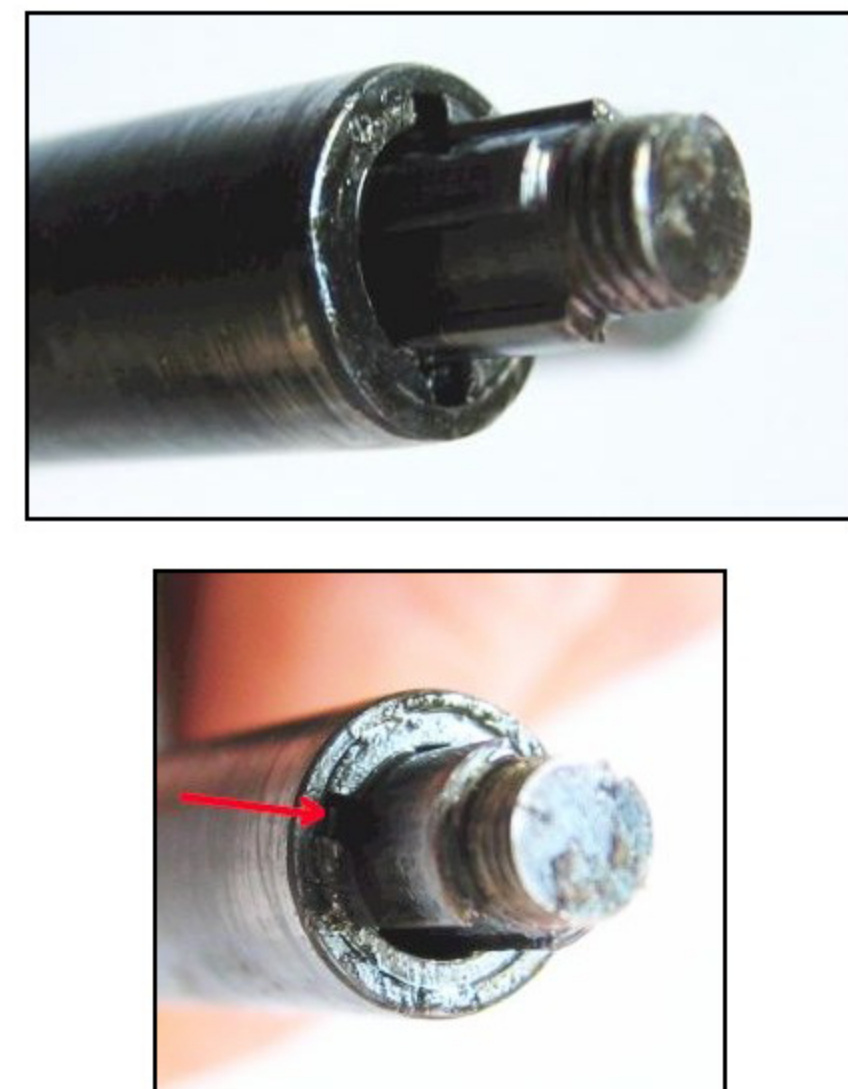
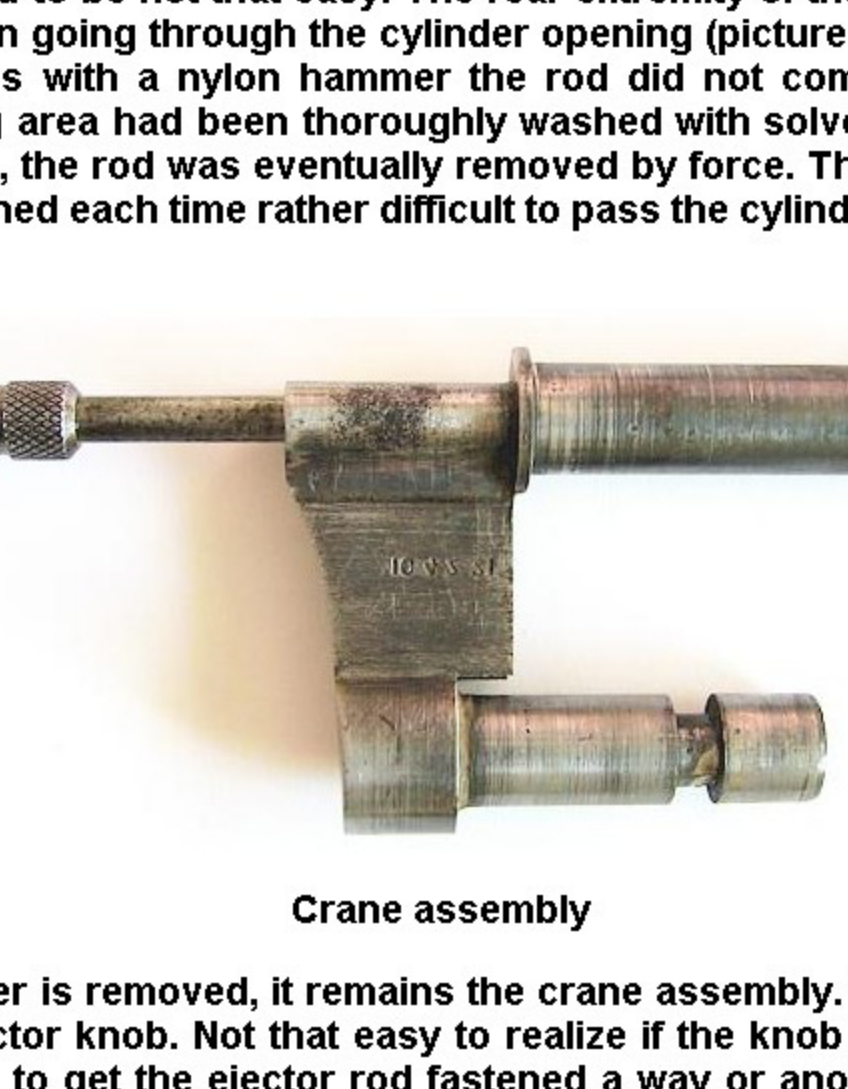


The first step is the dismounting of the ratchet that is screwed at the rear end of the ejector rod. The center of the ratchet is of hexagonal shape. The firm Brownells sells a multi-purpose "1911 Auto Bushing Wrench, Plus Ratchet/Ejector Rod Wrench" that should greatly help for this job.



Unfortunately, with the gun on hand in caliber .455 Eley, this tool failed to accomplish perfectly its duty because of its hexagonal hole being a little bit undersized to fully enter the ratchet. Is the ratchet for .455 caliber bolts of different size than other more usual calibers? Probably, as I suppose that Brownells would not sell an wrong sized tool.

Note however that the tool enters partly the ratchet hexagon, and this permits to effectively exert a pressure that could result in unscrewing a not too impervious ratchet. But a risk exists that the ratchet gets its geometry partly ruined in this adventure.

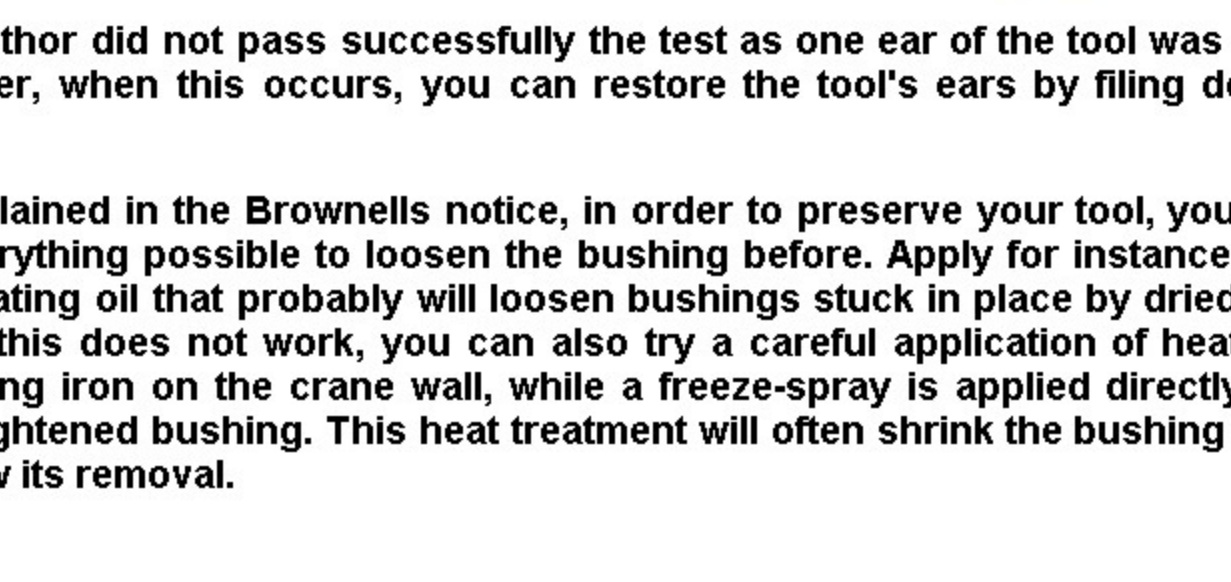


Finally, the ratchet proved to be more rebellious than expected, and a second method, probably less rigorous, was used. The forward tip of the ejector rod being maintained between the padded jaws of a vise, two .455 caliber bullets placed against two opposite arcs of the ejector star, a wrench.



Ejector rod extremity

Removing the ejector rod from the cylinder is theoretically a child's game, but in practice it proved to be not that easy. The rear extremity of the rod was sticking, or wedging, when going through the cylinder opening (picture above). Even after several light taps with a nylon hammer the rod did not come. Later, after the cylinder opening area had been thoroughly washed with solvent, and the rod tip abundantly oiled, the rod was eventually removed by force. This short section of the rod tip remained each time rather difficult to pass the cylinder opening.



Crane assembly

When the cylinder is removed, it remains the crane assembly. The first step is to unscrew the ejector knob. Not that easy to realize if the knob is screwed tightly. The challenge is to get the ejector rod fastened a way or another into a padded vise, and to unscrew the knob with leather-padded pliers to protect the checkering.

The next part to dismount is the crane bushing. The crane bushing is a relatively thin-walled part bearing two small notches (red arrow above). The notches are there to get a grip when using the adequate dismounting tool.

The bushing may be stuck in the crane due to rust, dry oil, dirt or over-tightening. Never attempt to unscrew it using a makeshift tool. This most likely would damage it. The removing of the bushing is required in very few instances. Mostly when the ejector rod was damaged and has to be replaced.

Brownells crane bushing tool - item #080-654-000

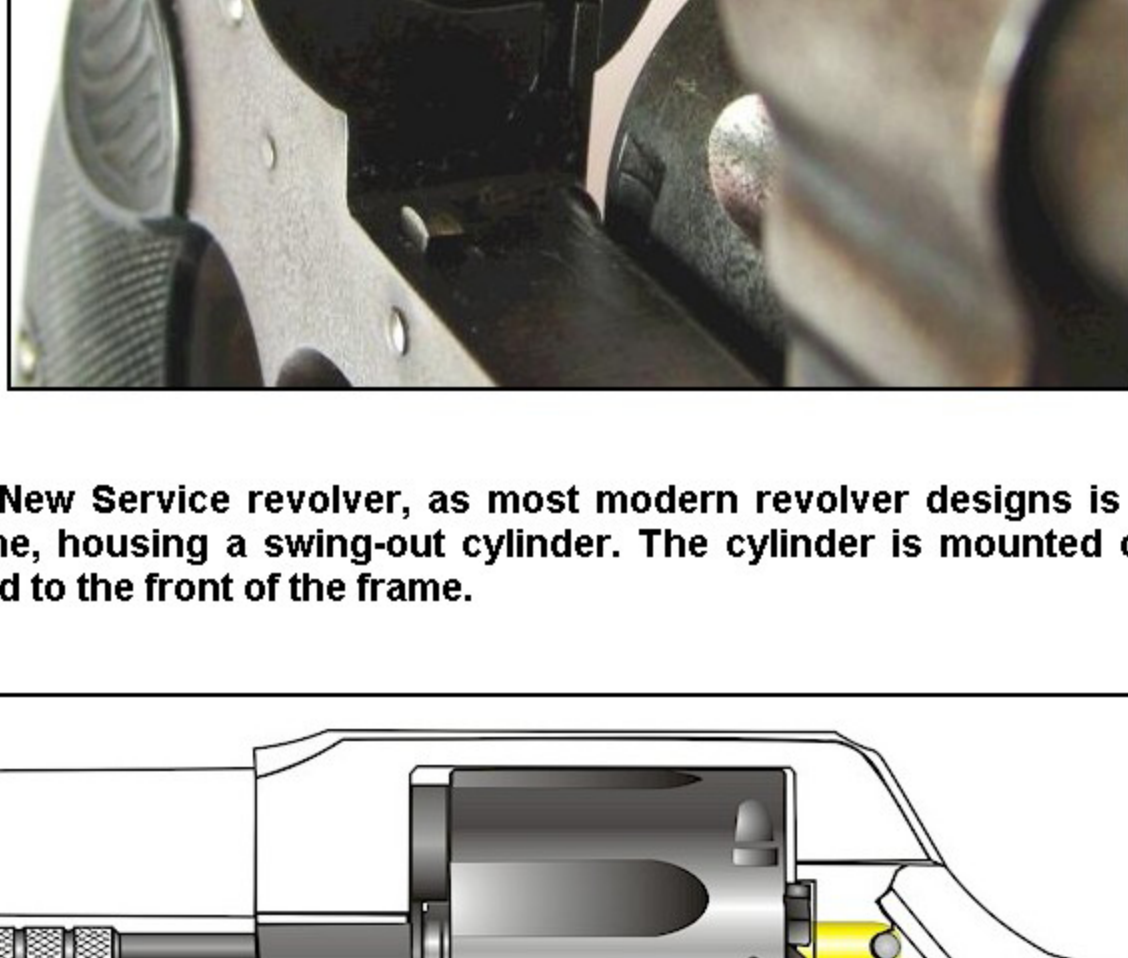
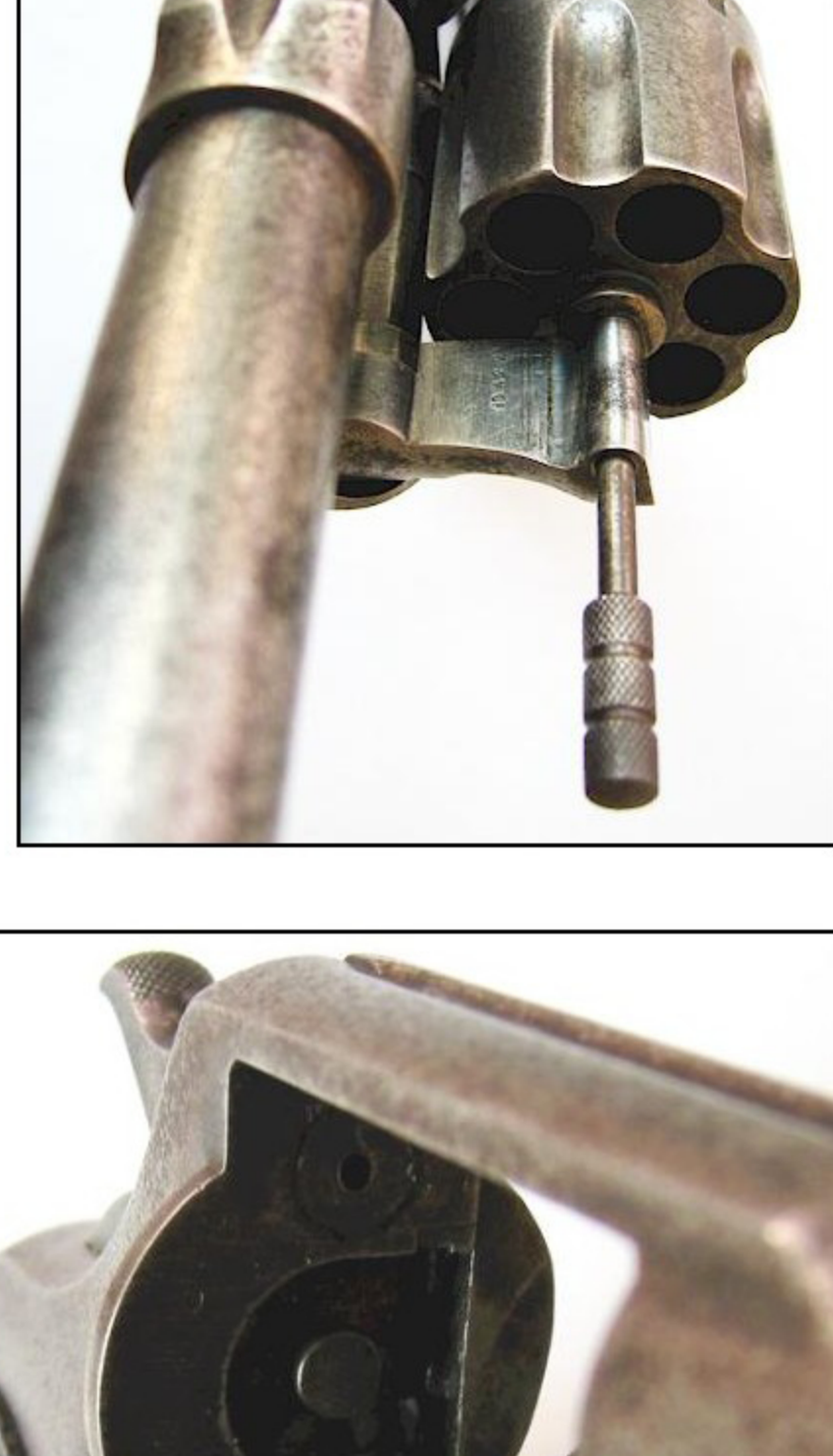
For those who need the specific tool to remove the crane bushing, they can purchase it from Brownells. You will notice that the tool is as thin-walled as the bushing itself. This render the unscrewing operation very delicate as it is rather difficult to appreciate how far to crank the wrench before reaching the point of rupture of the tiny tool's ears.

The author did not pass successfully the test as one ear of the tool was broken. However, when this occurs, you can restore the tool's ears by filing down the tube.

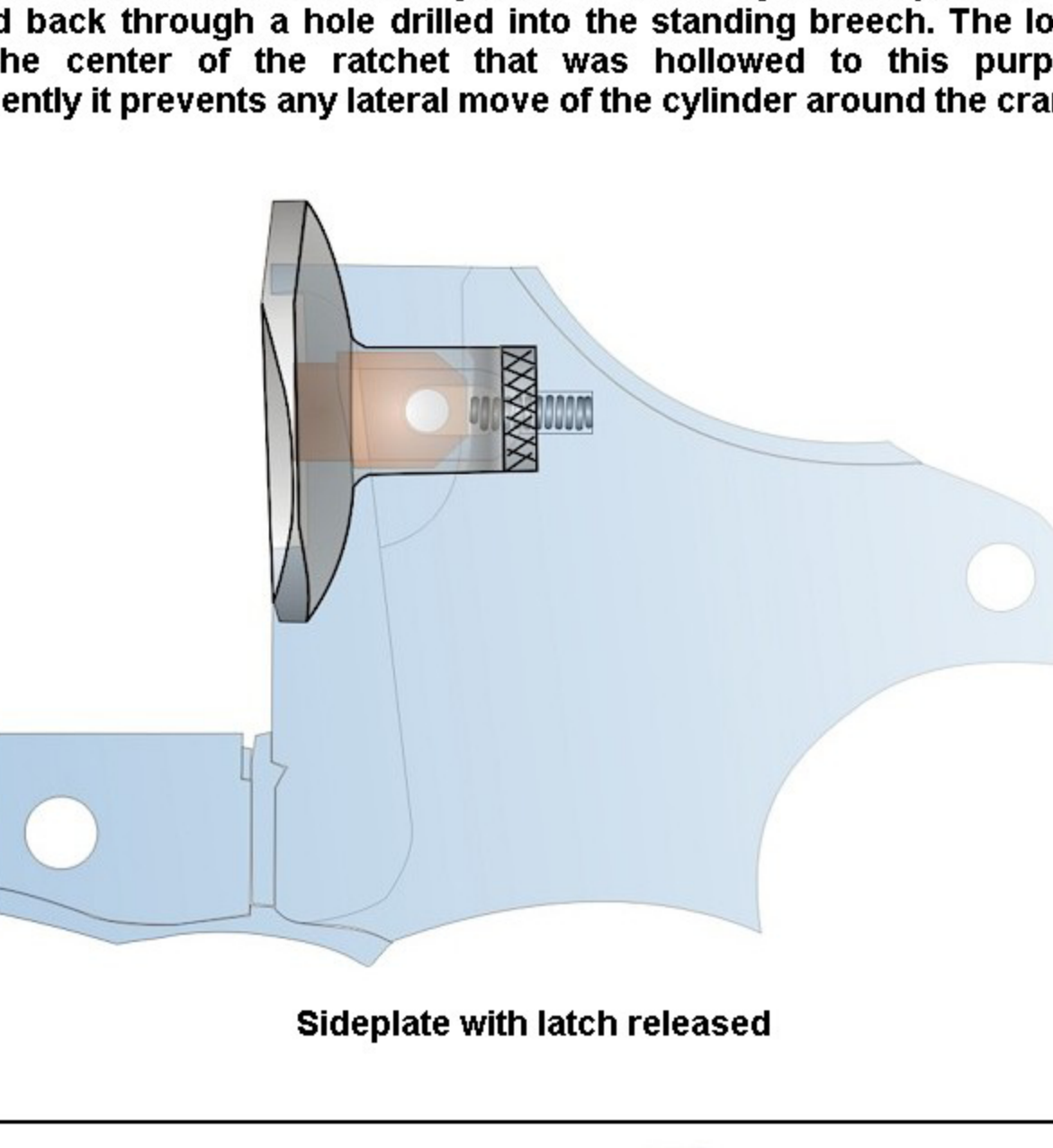
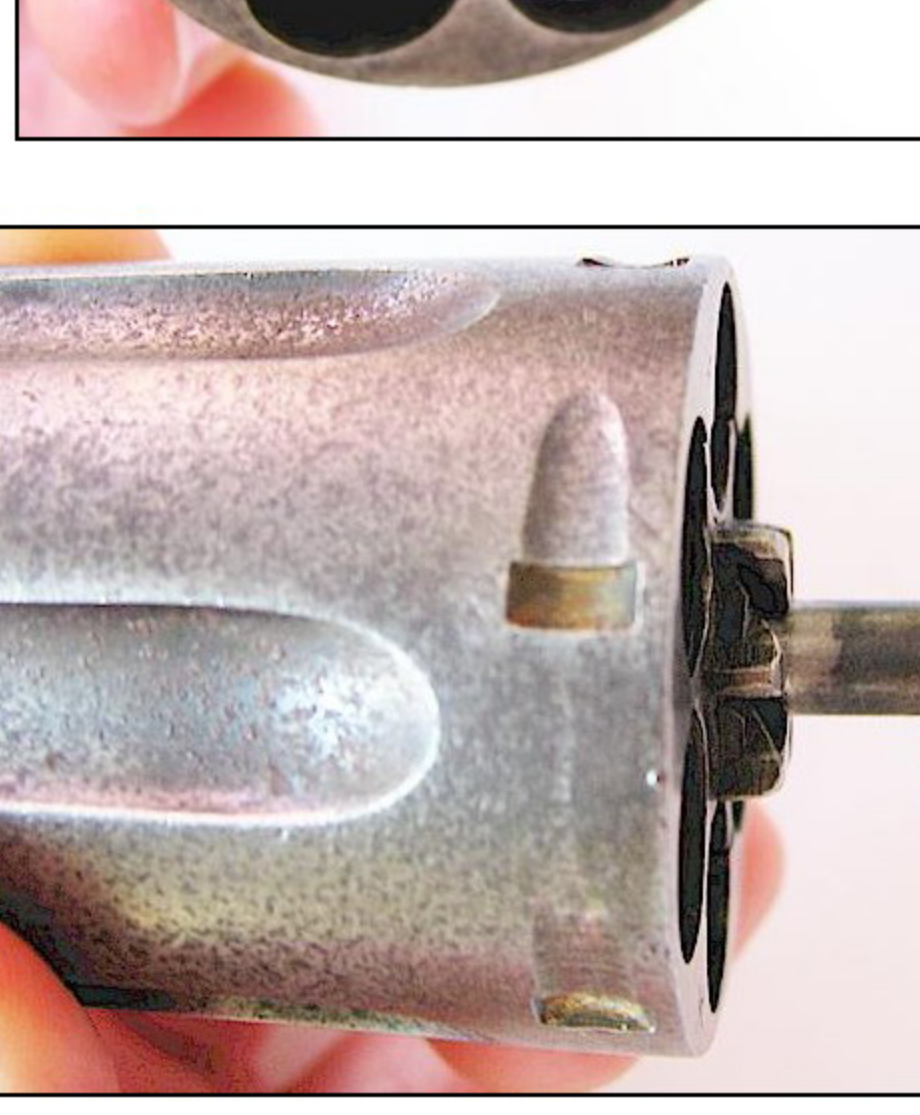
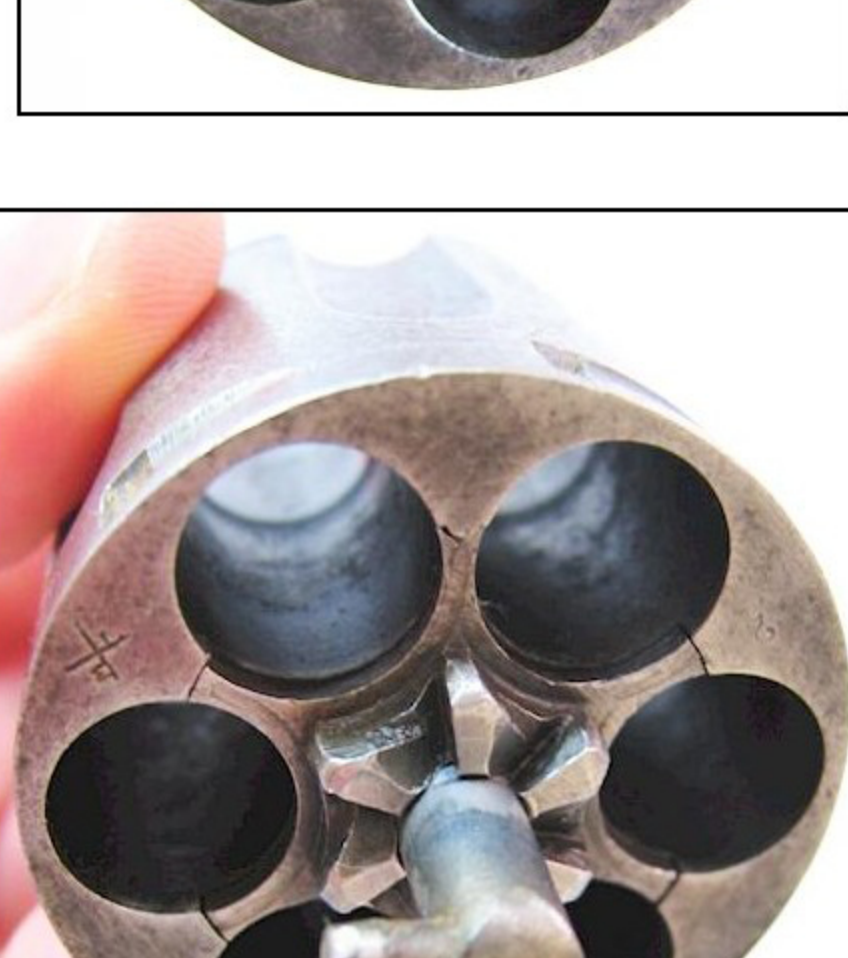
As explained in the Brownells notice, in order to preserve your tool, you should do everything possible to loosen the bushing before. Apply for instance a good penetrating oil that probably will loosen bushings stuck in place by dried oil and dirt. If this does not work, you can also try a careful application of heat from a soldering iron on the crane wall, while a freeze-spray is applied directly on the over-tightened bushing. This heat treatment will often shrink the bushing enough to allow its removal.

Functioning of the Colt New Service revolver (I)

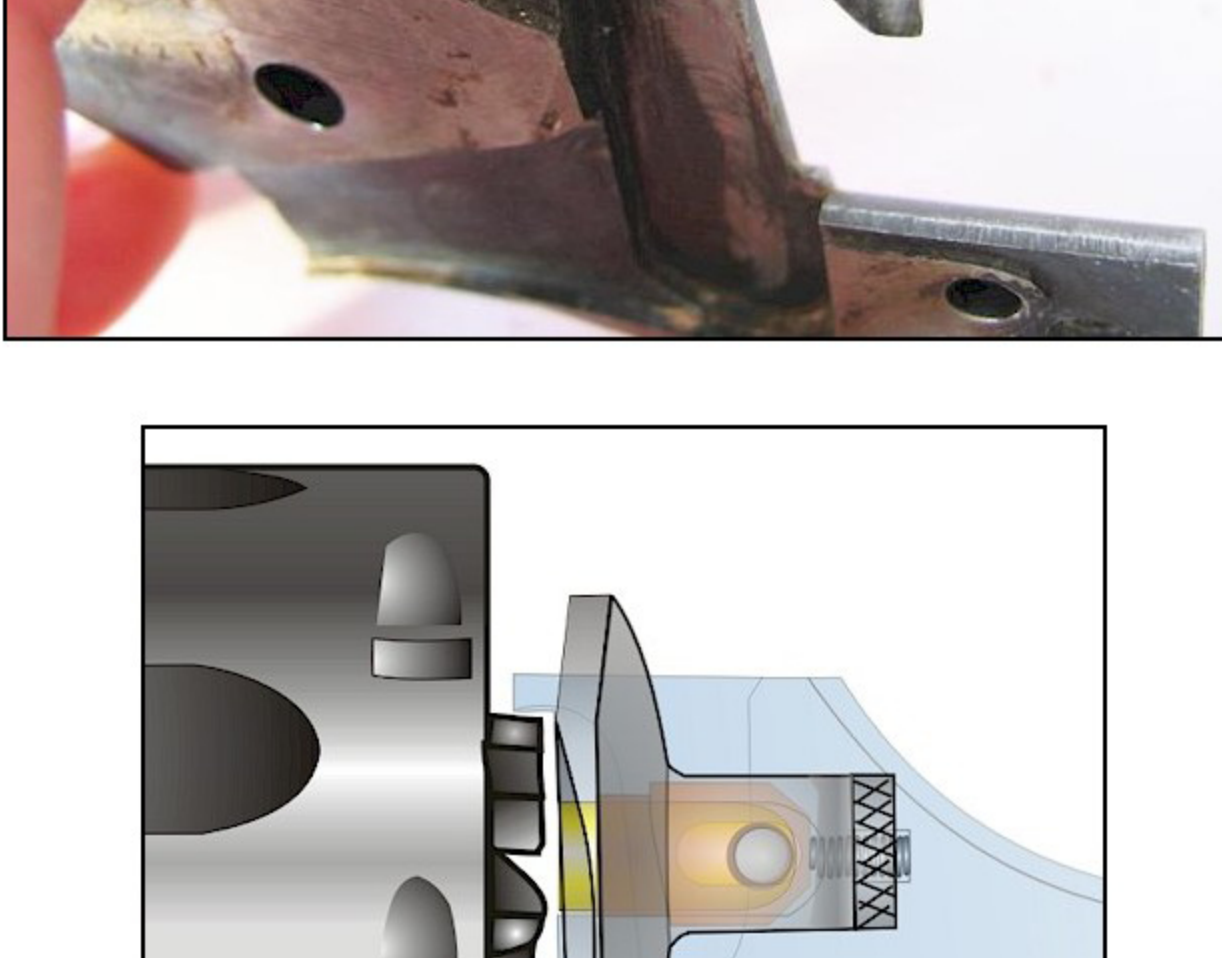
- Loading and unloading



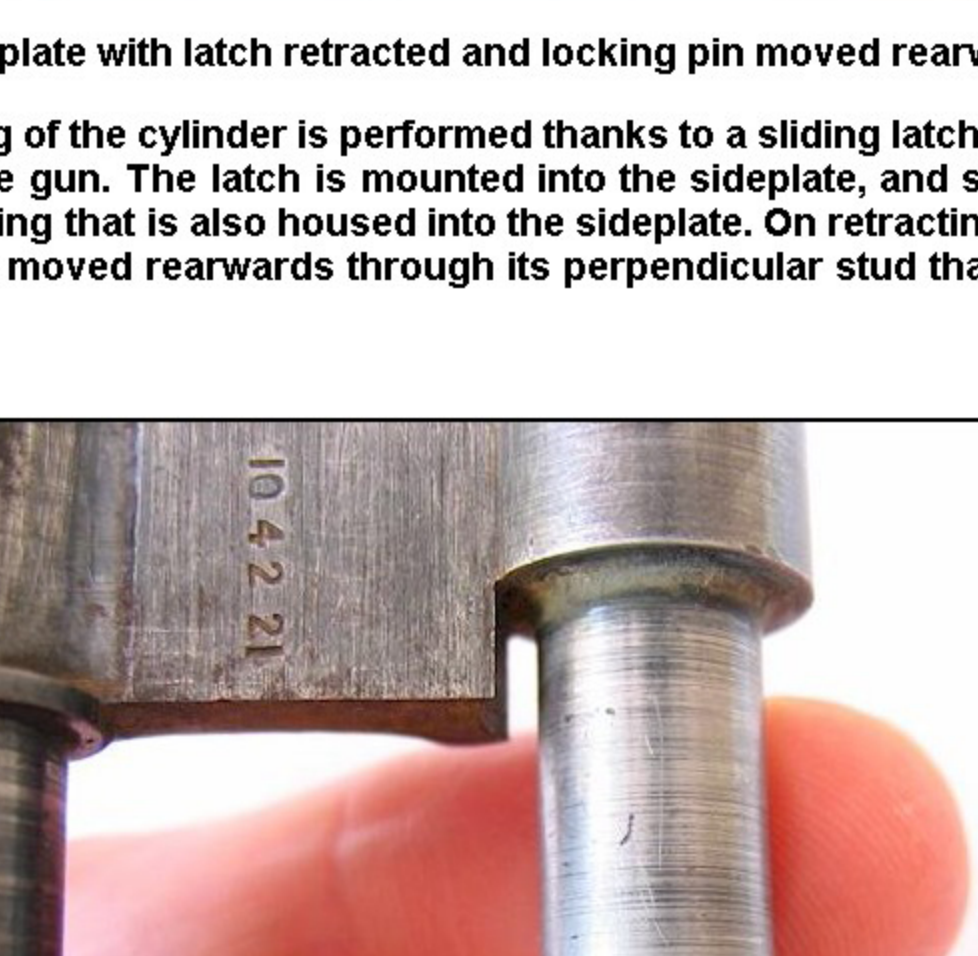
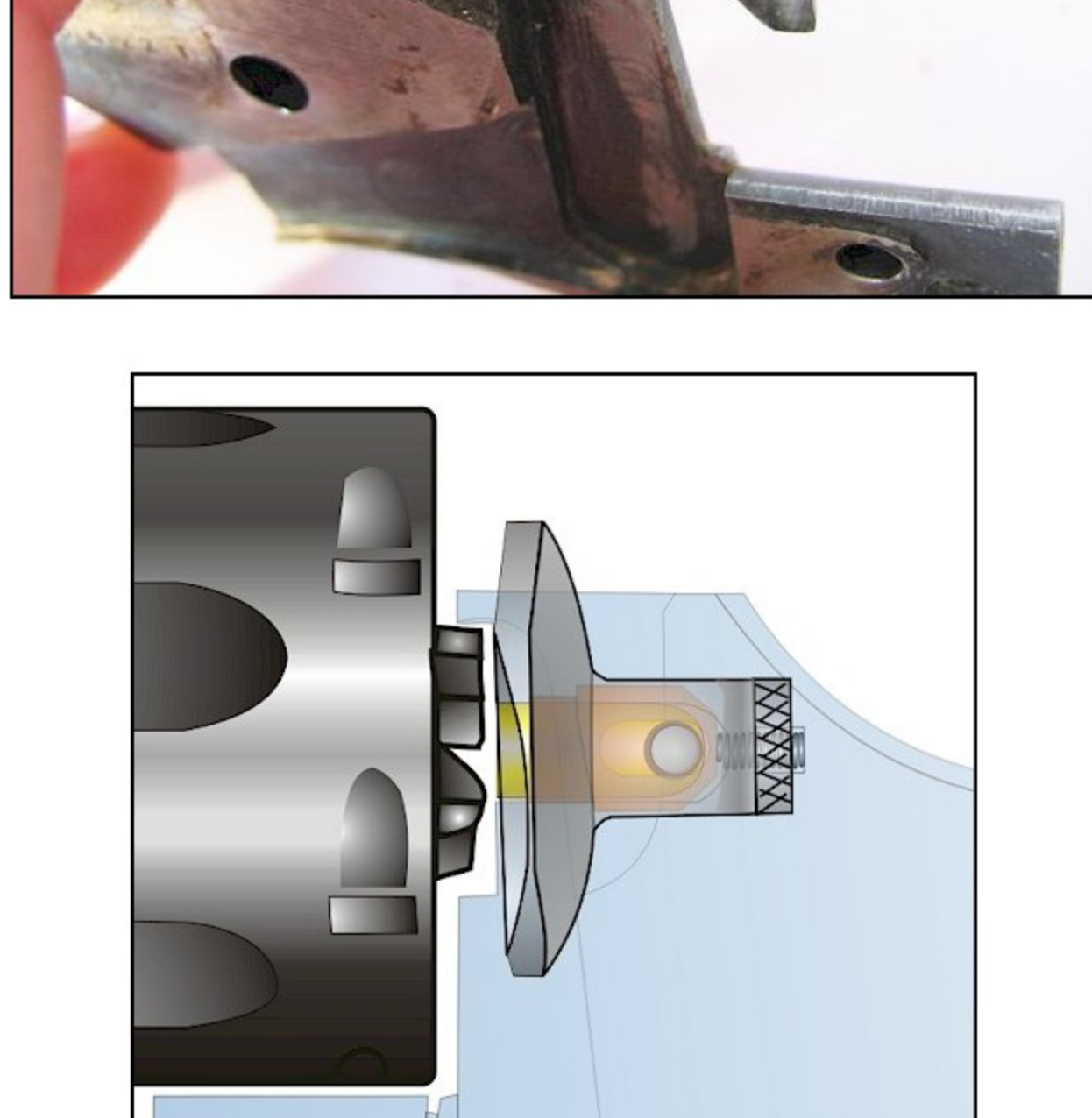
The Colt New Service revolver, as most modern revolver designs is made of a solid frame, housing a swing-out cylinder. The cylinder is mounted on a crane assembled to the front of the frame.



When closed inside the frame, the cylinder is bolted by a mere pin that can move forth and back through a hole drilled into the standing breech. The locking pin enters the center of the ratchet that was hollowed to this purpose, and consequently it prevents any lateral move of the cylinder around the crane pivot.

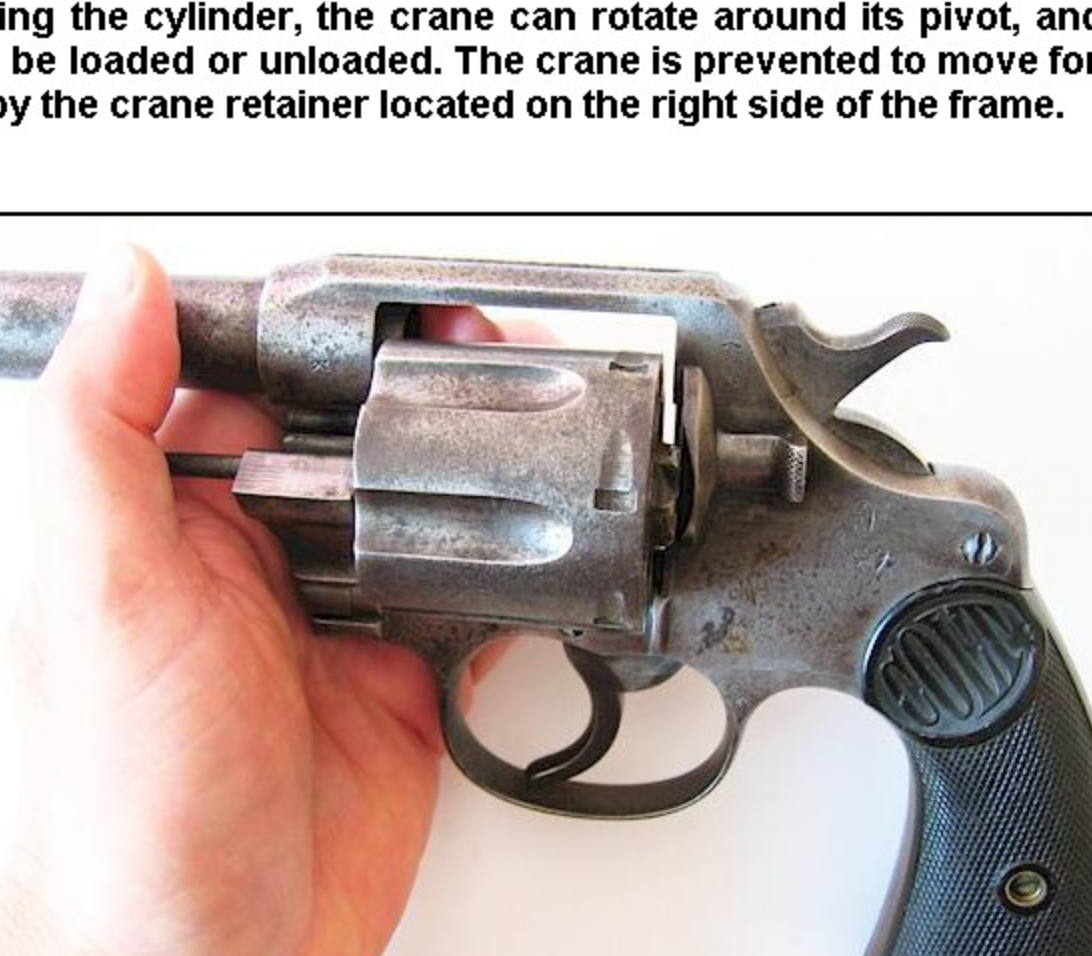


Sideplate with latch released



Sideplate with latch retracted and locking pin moved rearwards

The unlocking of the cylinder is performed thanks to a sliding latch located on the left side of the gun. The latch is mounted into the sideplate, and slides against a small coil spring that is also housed into the sideplate. On retracting the latch, the locking pin is moved rearwards through its perpendicular stud that enters a hole in the latch.



Crane retainer on the right side of the frame

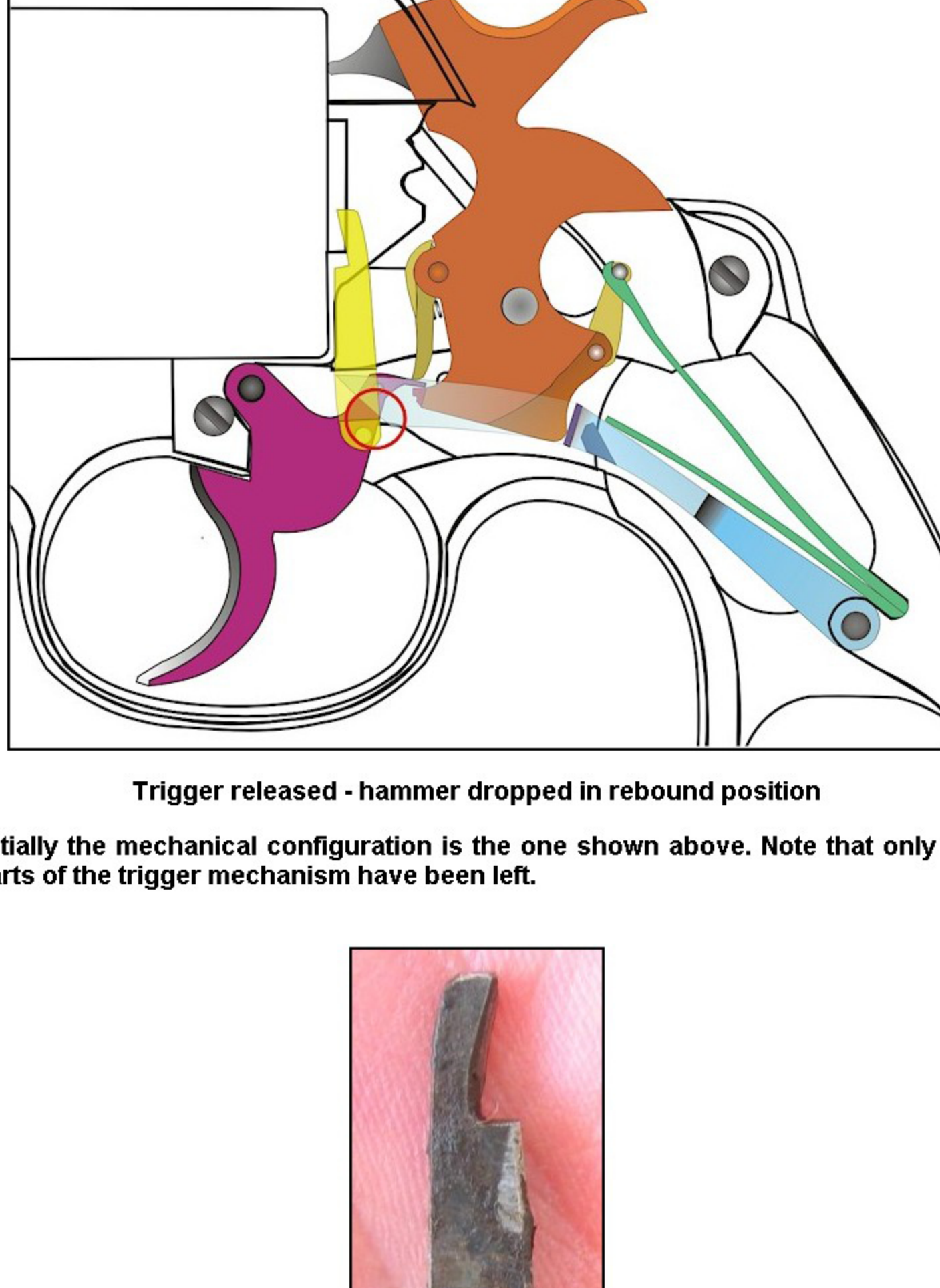
On unlocking the cylinder, the crane can rotate around its pivot, and allows the cylinder to be loaded or unloaded. The crane is prevented to move forward out of the frame by the crane retainer located on the right side of the frame.



Pressure on the ejector rod, which passes through the cylinder, forces the ejector star out of its recess into the rear face of the cylinder. The cartridge cases, then removed from the cylinder chamber, can drop out. Of course, releasing pressure on the ejector rod permits the compressed ejector spring to force the ejector back into place in the cylinder, ready for reloading.

Functioning of the Colt New Service revolver (II)

- Shooting in single-action mode

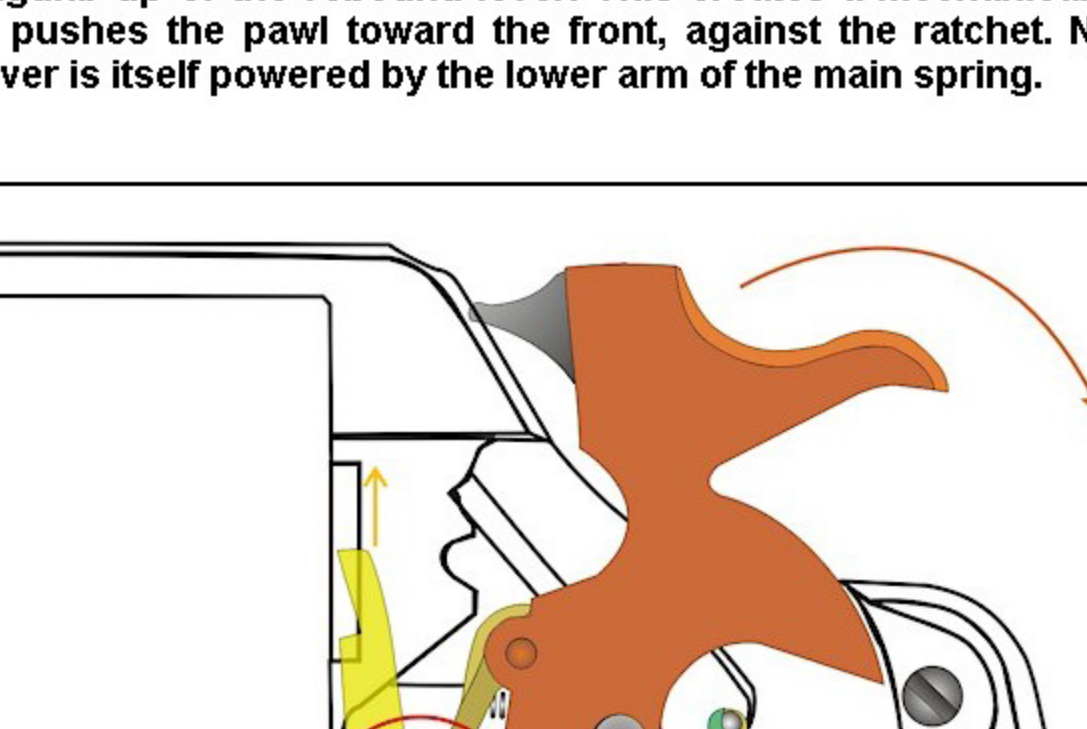


Trigger released - hammer dropped in rebound position

Initially the mechanical configuration is the one shown above. Note that only the parts of the trigger mechanism have been left.

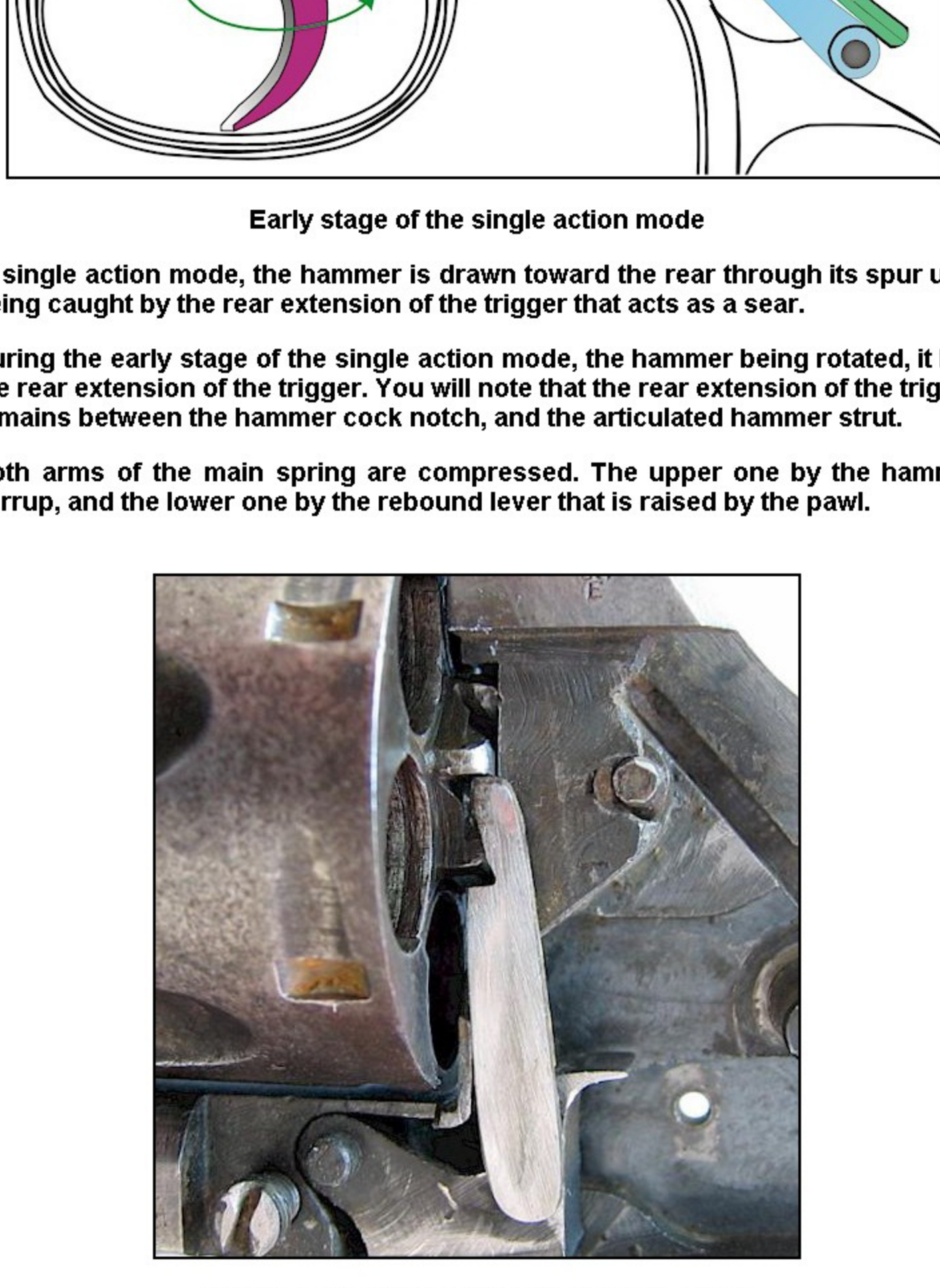


Pawl with cut on the under face
The red arrow shows the area under push of the rebound lever



Rebound lever bearing on the pawl through its under-face cut

The trigger is released, and receives the pressure of the rebound lever (blue color in the sketch) through the pawl (yellow color in the sketch), that has a large cut on its under face. On the lower edge of this cut (red arrow above) is bearing the forward angular tip of the rebound lever. This creates a mechanical couple that constantly pushes the pawl toward the front, against the ratchet. Note that the rebound lever is itself powered by the lower arm of the main spring.

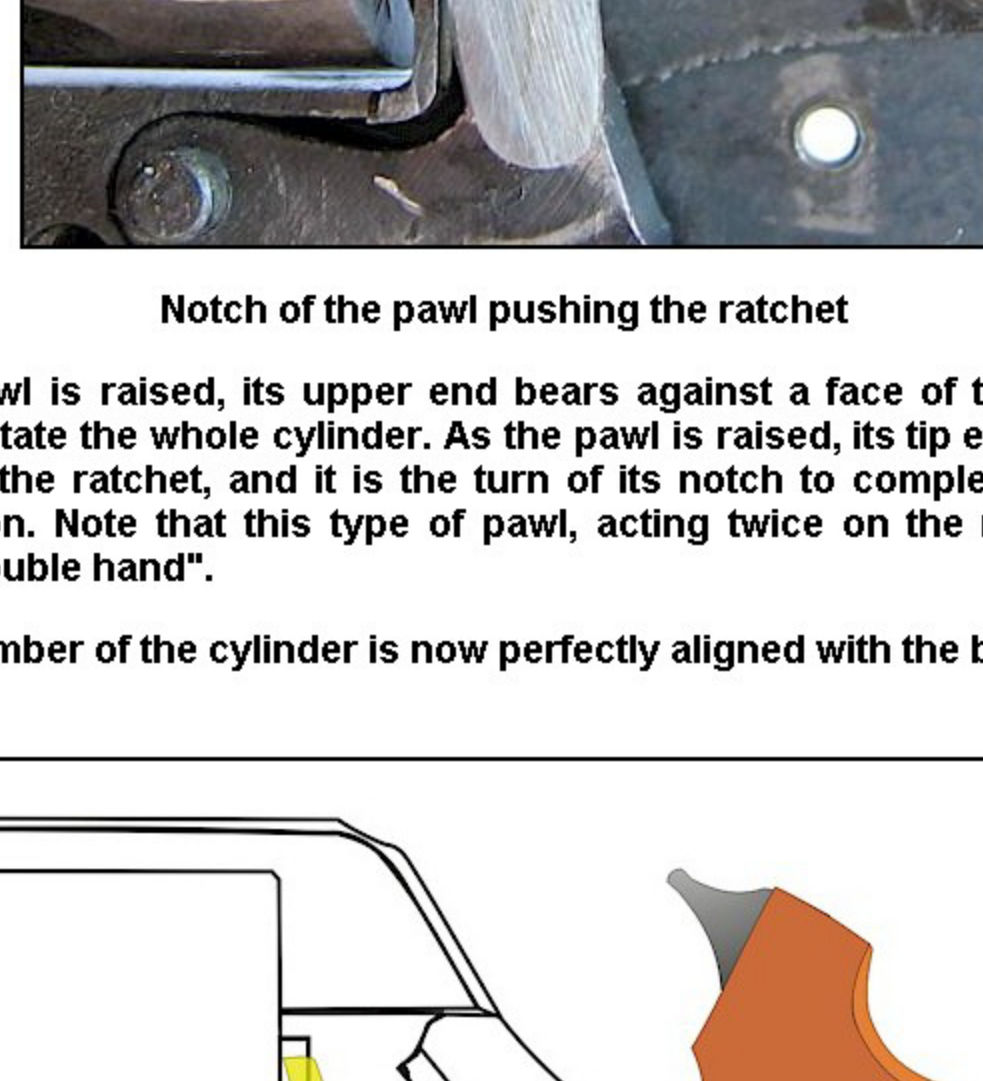


Early stage of the single action mode

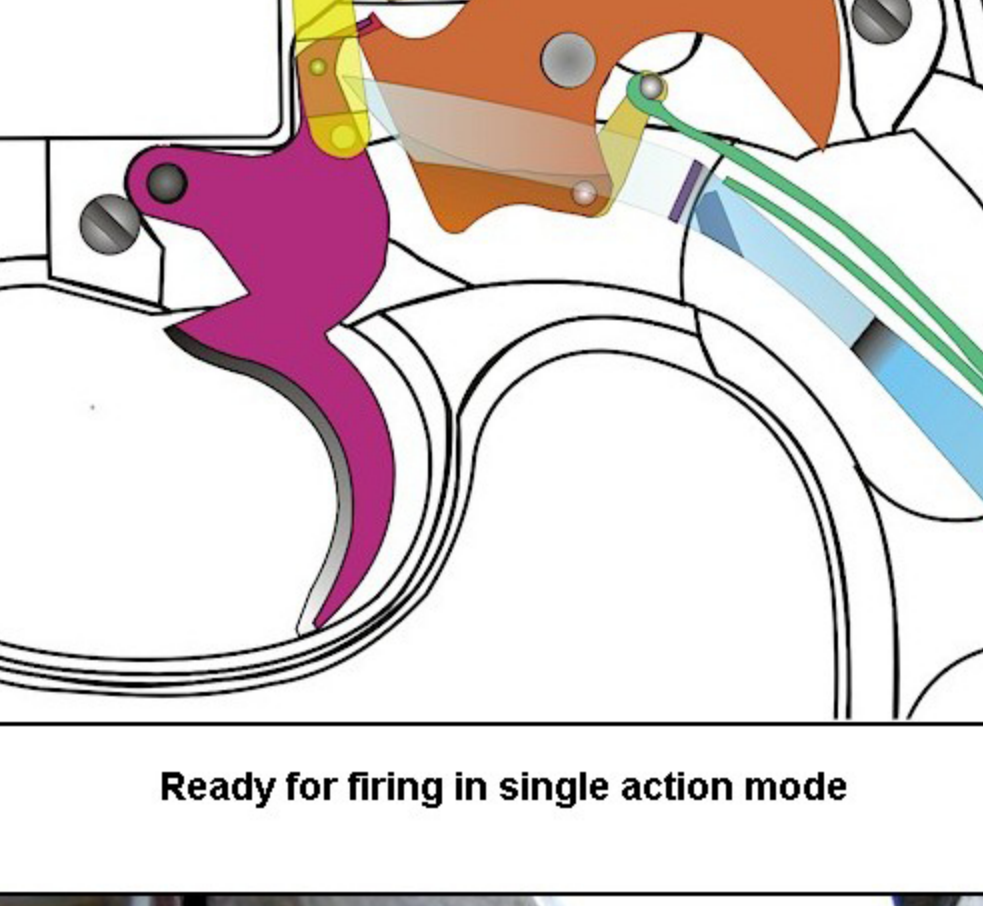
In single action mode, the hammer is drawn toward the rear through its spur until being caught by the rear extension of the trigger that acts as a sear.

During the early stage of the single action mode, the hammer being rotated, it lifts the rear extension of the trigger. You will note that the rear extension of the trigger remains between the hammer cock notch, and the articulated hammer strut.

Both arms of the main spring are compressed. The upper one by the hammer stirrup, and the lower one by the rebound lever that is raised by the pawl.



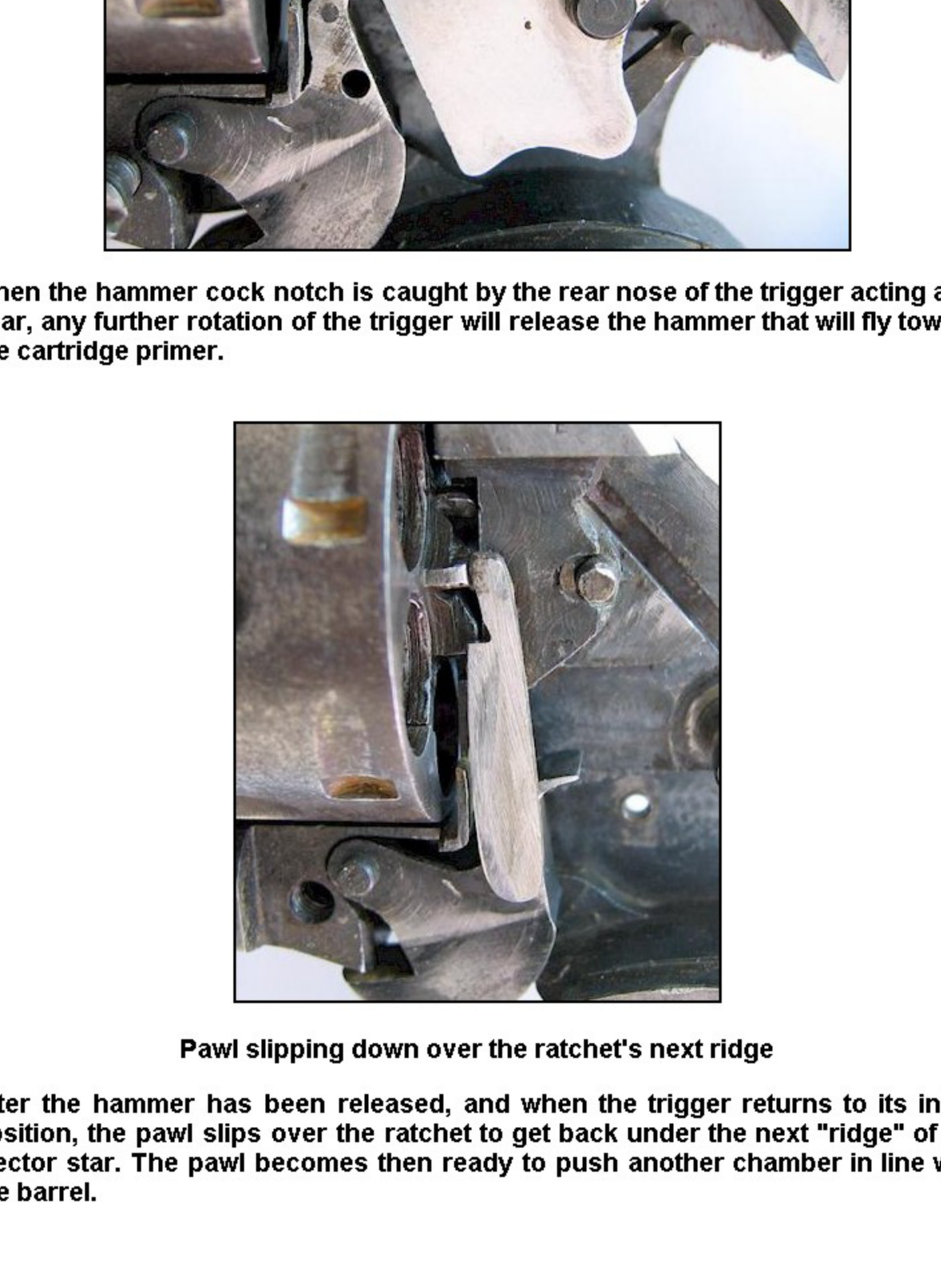
First stage of the pawl's push on the ratchet



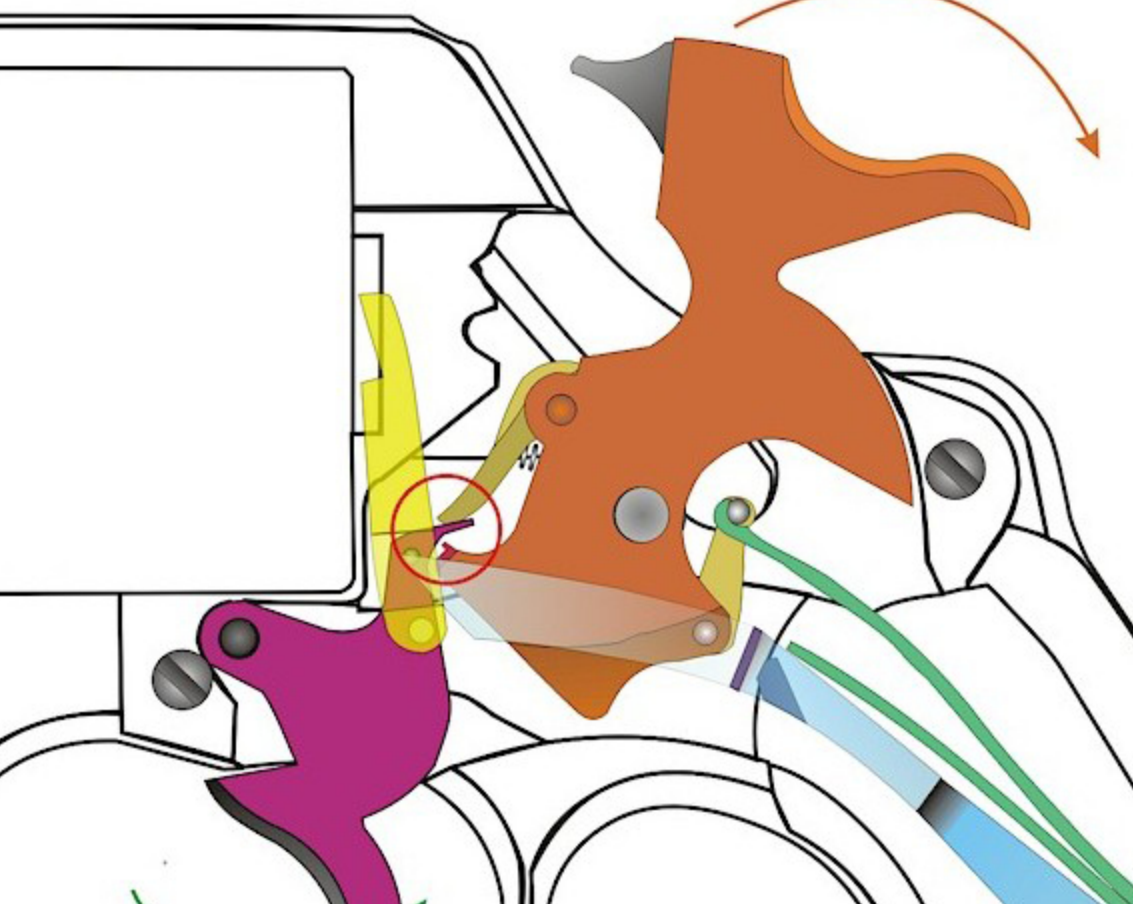
Notch of the pawl pushing the ratchet

When the pawl is raised, its upper end bears against a face of the ratchet and forces it to rotate the whole cylinder. As the pawl is raised, its tip eventually loses contact with the ratchet, and it is the turn of its notch to complete the cylinder partial rotation. Note that this type of pawl, acting twice on the ratchet, is also known as "double hand".

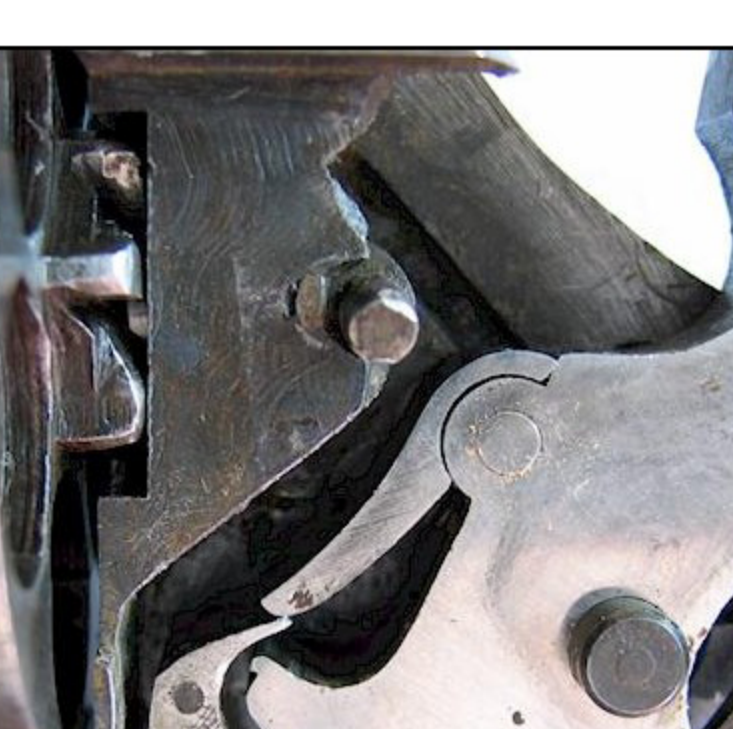
The next chamber of the cylinder is now perfectly aligned with the barrel.



Ready for firing in single action mode



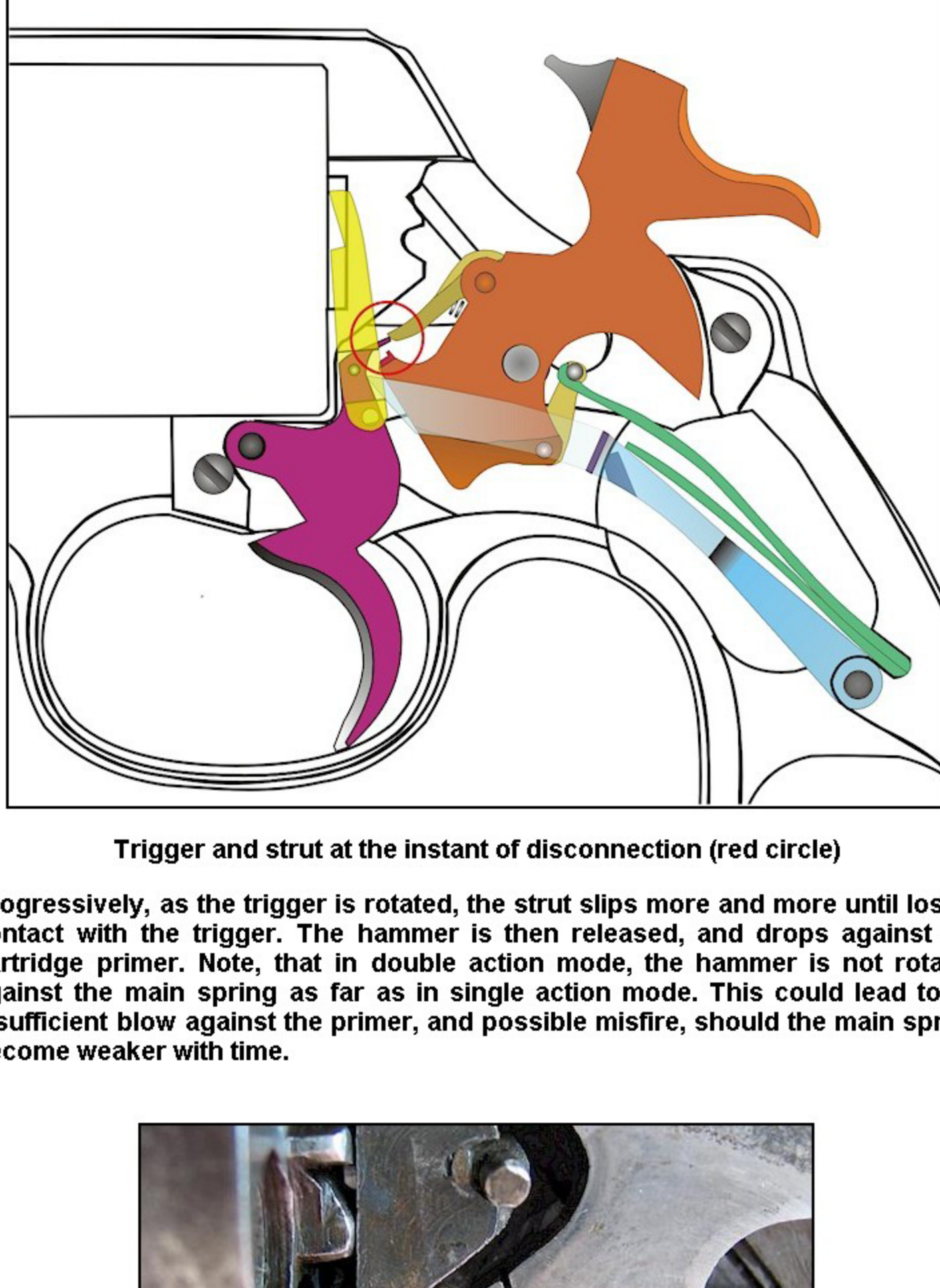
When the hammer cock notch is caught by the rear nose of the trigger acting as a sear, any further rotation of the trigger will release the hammer that will fly toward the cartridge primer.



Pawl slipping down over the ratchet's next ridge

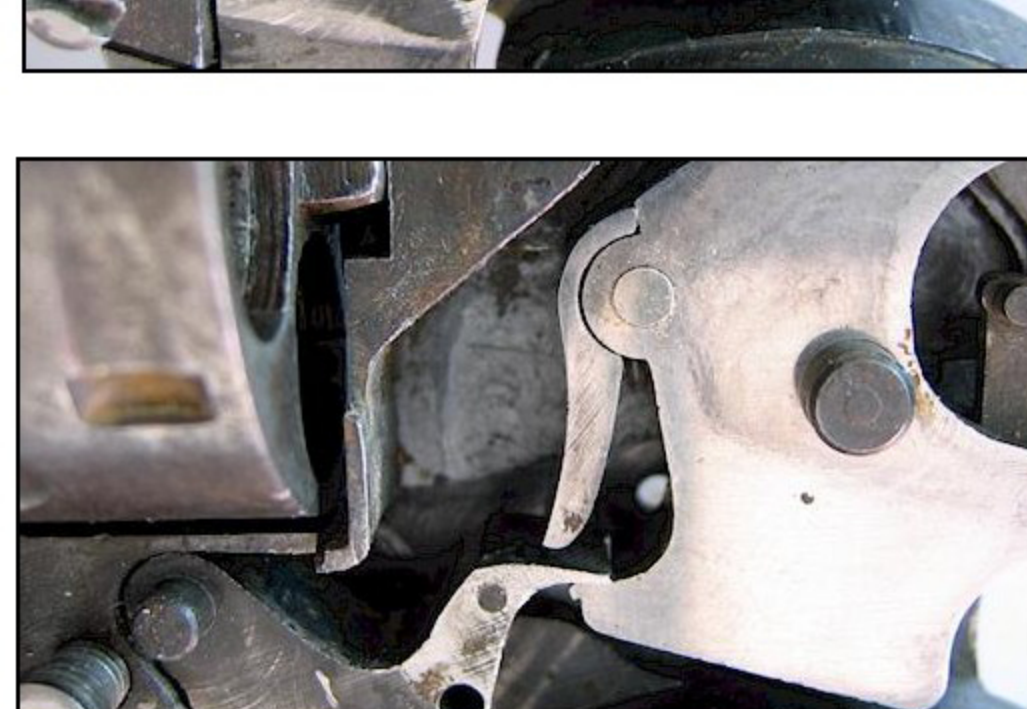
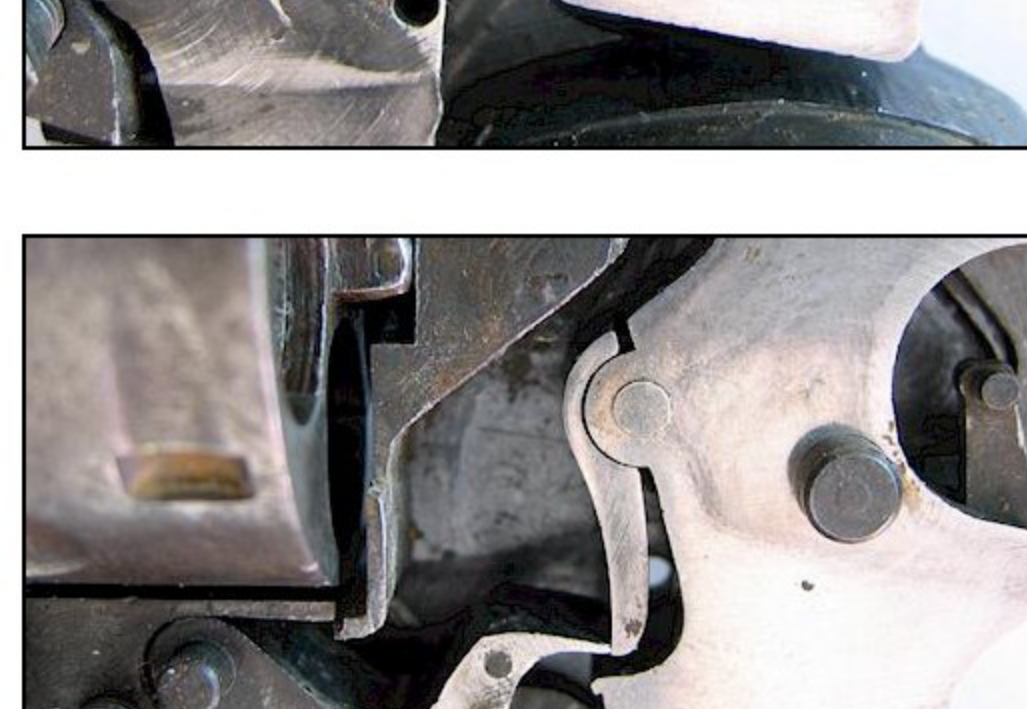
After the hammer has been released, and when the trigger returns to its initial position, the pawl slips over the ratchet to get back under the next "ridge" of the ejector star. The pawl becomes then ready to push another chamber in line with the barrel.

- Shooting in double action mode



Trigger and strut at the instant of disconnection (red circle)

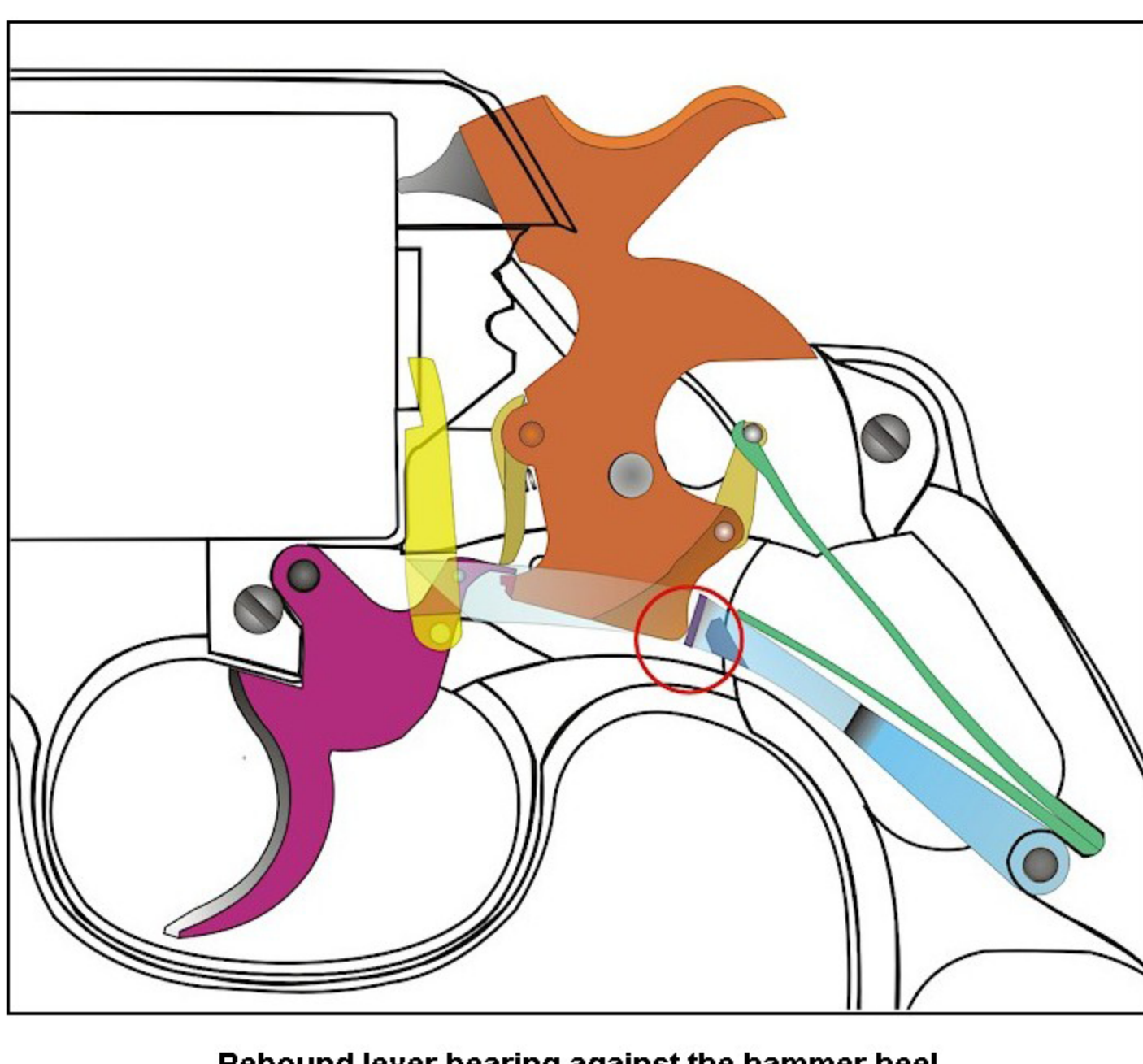
Progressively, as the trigger is rotated, the strut slips more and more until losing contact with the trigger. The hammer is then released, and drops against the cartridge primer. Note, that in double action mode, the hammer is not rotated against the main spring as far as in single action mode. This could lead to an insufficient blow against the primer, and possible misfire, should the main spring become weaker with time.



When the trigger is released by the shooter, the trigger's rear nose slips onto the forward face of the hammer strut that is compressed against its tiny return spring until the trigger nose get back behind the strut.

The safeties of the Colt New Service revolver (I)

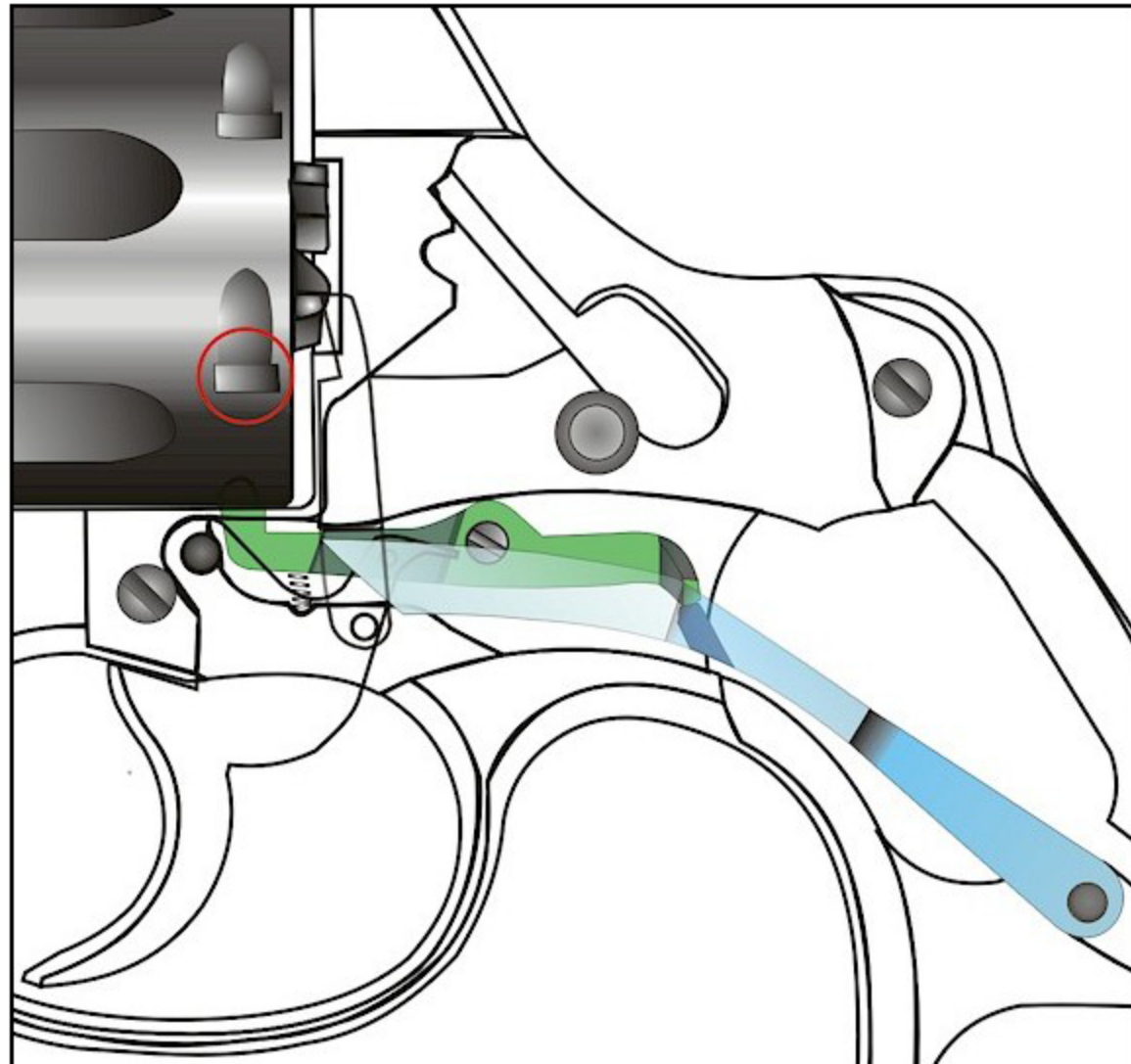
- The rebounding hammer



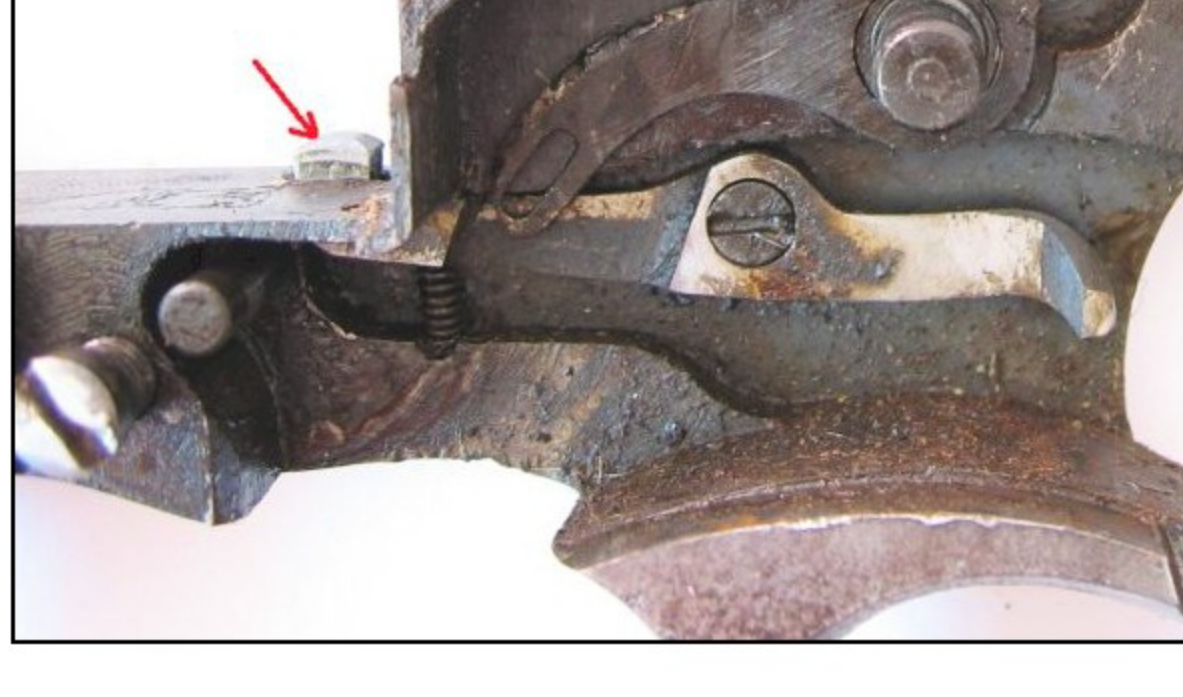
Rebound lever bearing against the hammer heel

When the hammer is released, it is automatically set to its rebound position at the end of its forward move. This is performed by the inner face of the rebound lever (red circle above) that pushes the heel of the hammer. The hammer is consequently obliged to slightly rotate toward the rear.

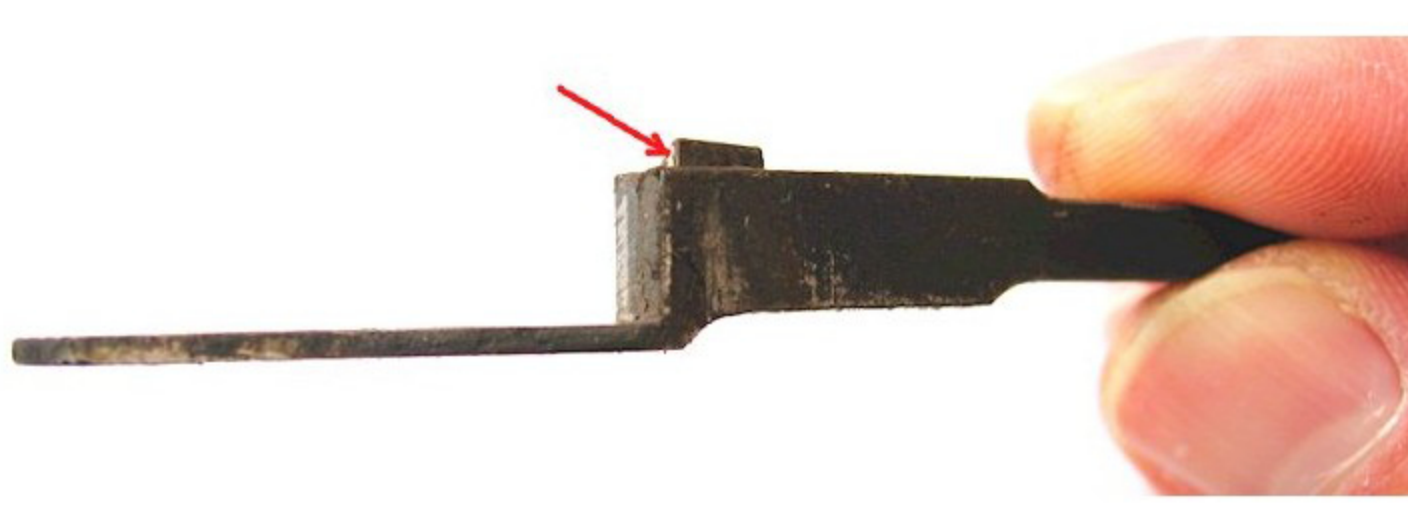
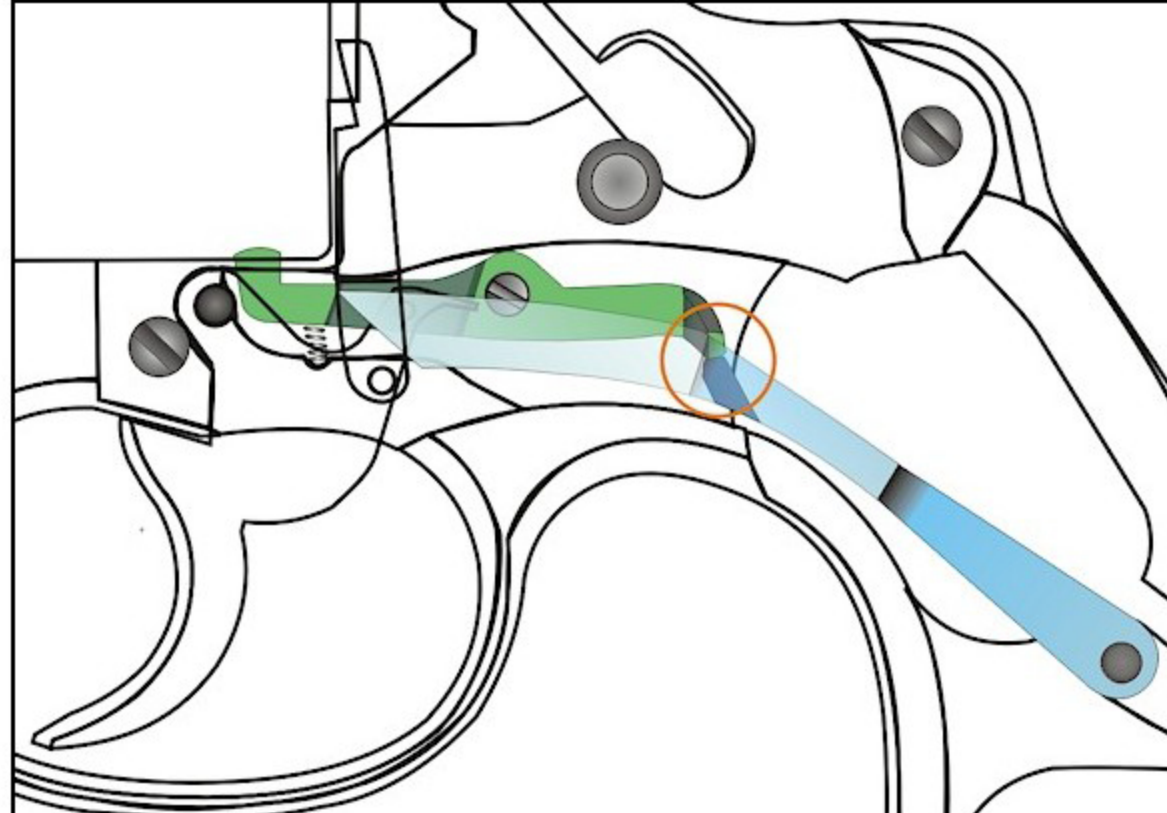
- The cylinder locking



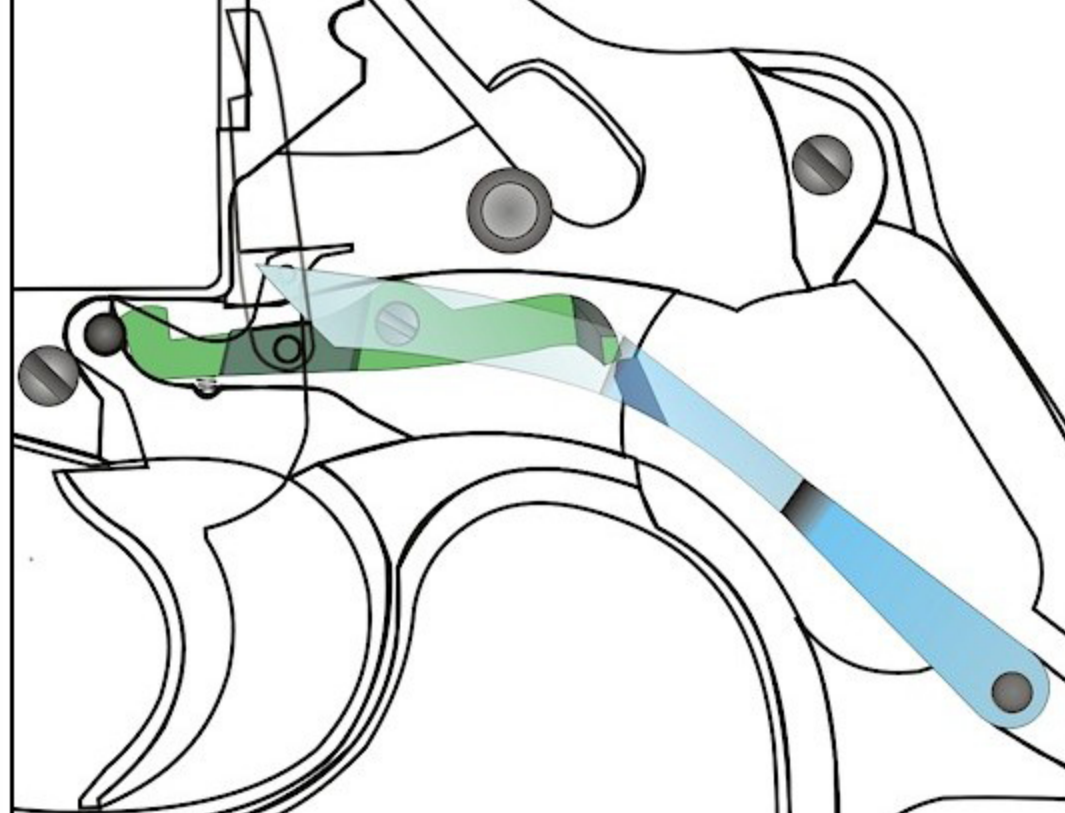
On its periphery, the cylinder has received a series of deep rectangular cuts (red circle above). When the cylinder is rotated by the trigger hand, until the next chamber is in line with the barrel, a specific spring loaded bolt (green color above) snaps into one of these rectangular cuts, and positively immobilise the cylinder.



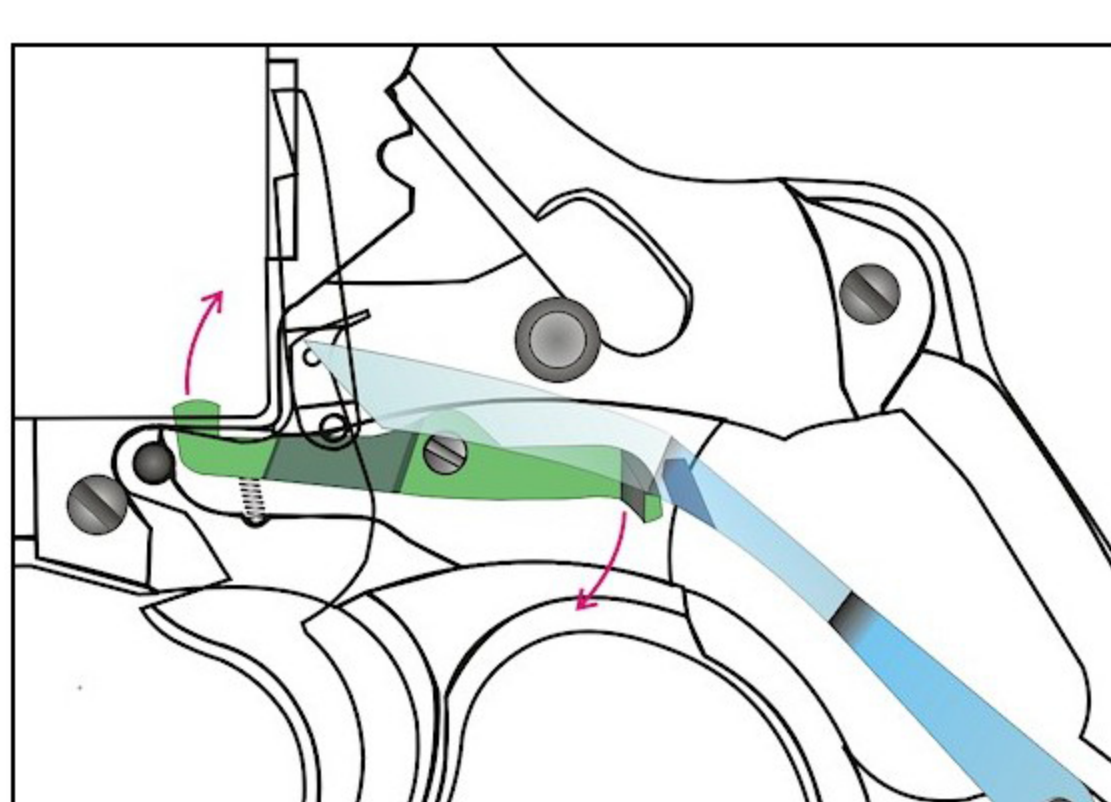
As shown above, the cylinder bolt has an L shaped forward end, that passes through the frame (red arrow above), and enters into the open space of the frame devoted to the cylinder.



When the trigger is pulled, the rebound lever is driven upward by the trigger hand. On the inner face of the rebound lever is a small extension (red arrow above) that pushes the rear extremity of the cylinder bolt (orange circle above).



The more the trigger is pulled, the more the cylinder bolt is rotated, but the bolt is disengaged from the cylinder notch very early in order to allow the immediate rotation of the cylinder when the trigger is pulled (or if the hammer is drawn manually).

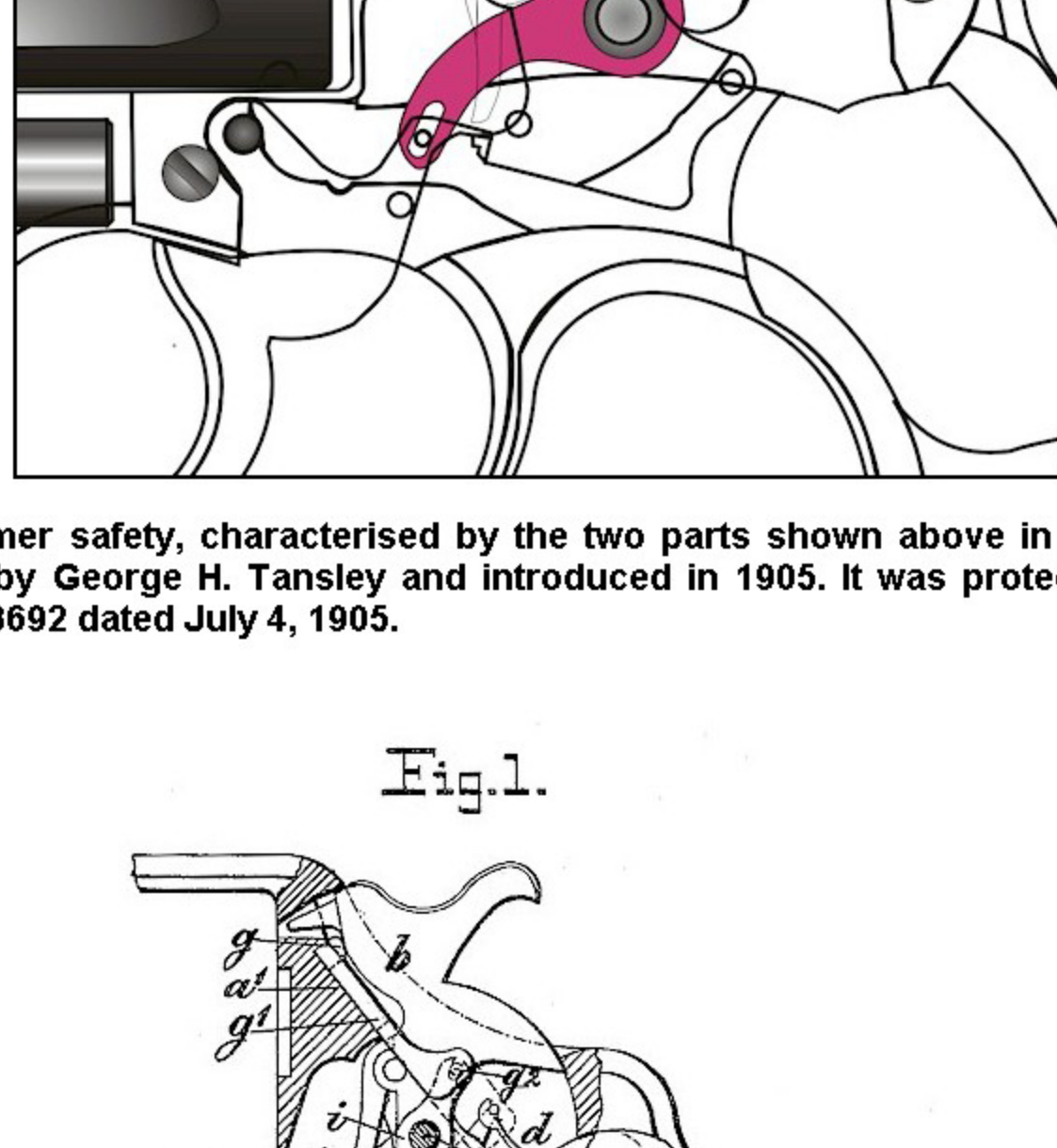
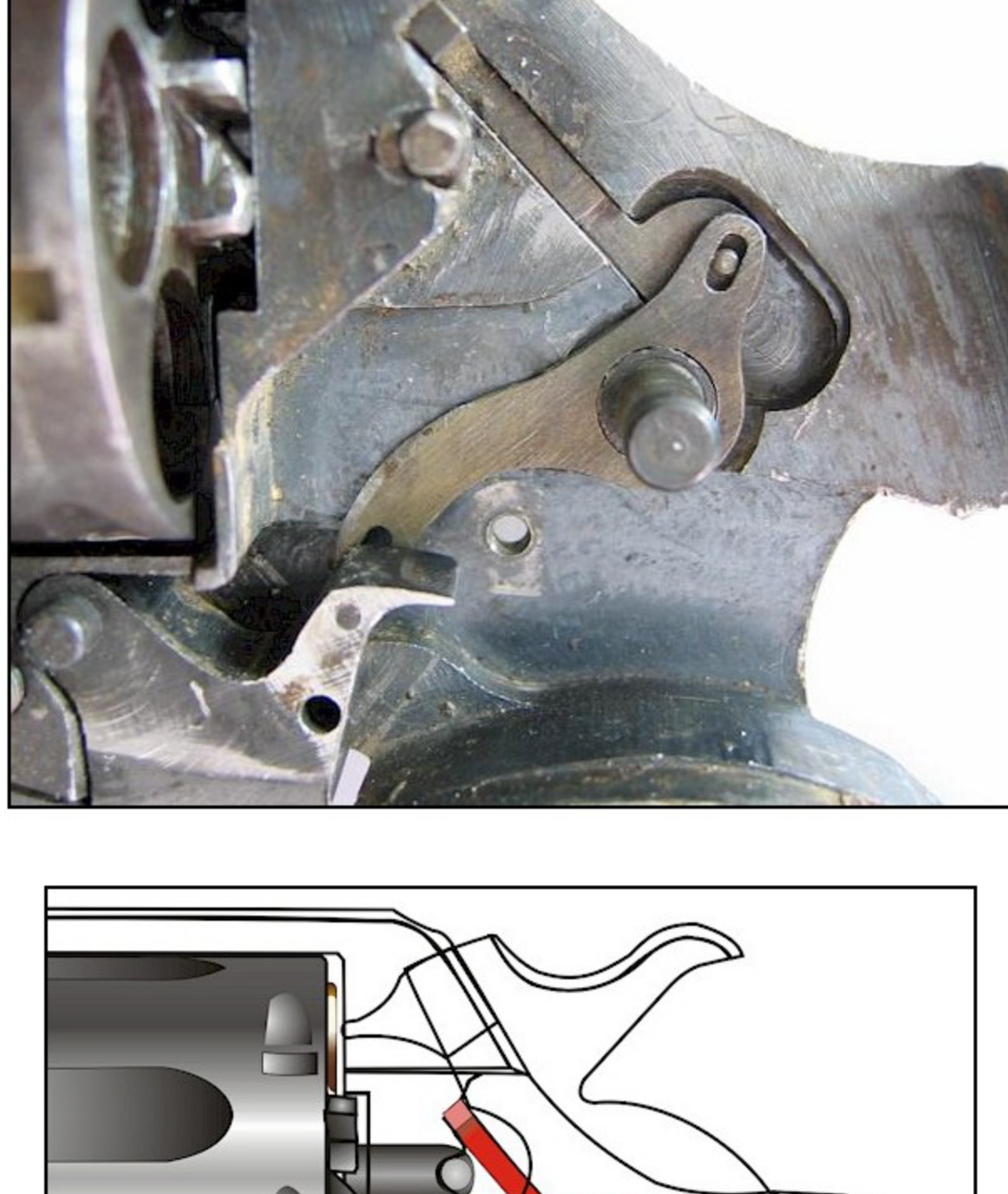


Cylinder bolt released by the rebound lever

At the final stage, when the next chamber is perfectly aligned with the barrel, the cylinder bolt slips out of engagement with the rebound lever, and snaps into the next cylinder cut under the pressure of its tiny coil spring.

The safeties of the Colt New Service revolver (II)

- The hammer safety or "Colt Positive Safety"



The hammer safety, characterised by the two parts shown above in color, was invented by George H. Tansley and introduced in 1905. It was protected by US patent 793692 dated July 4, 1905.

Fig.1.

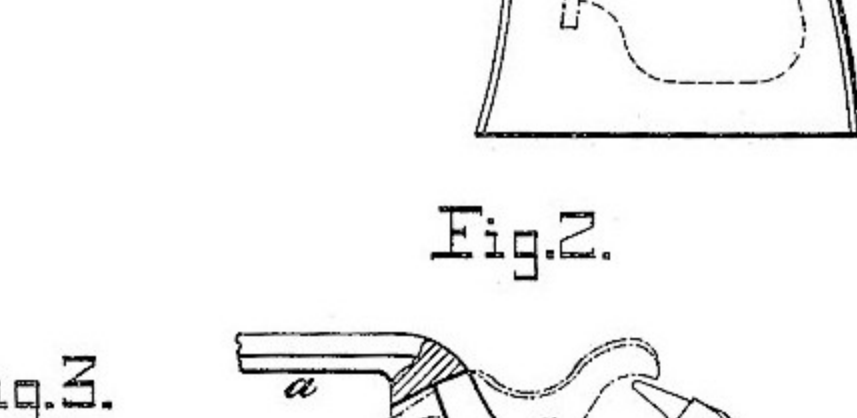


Fig.2.

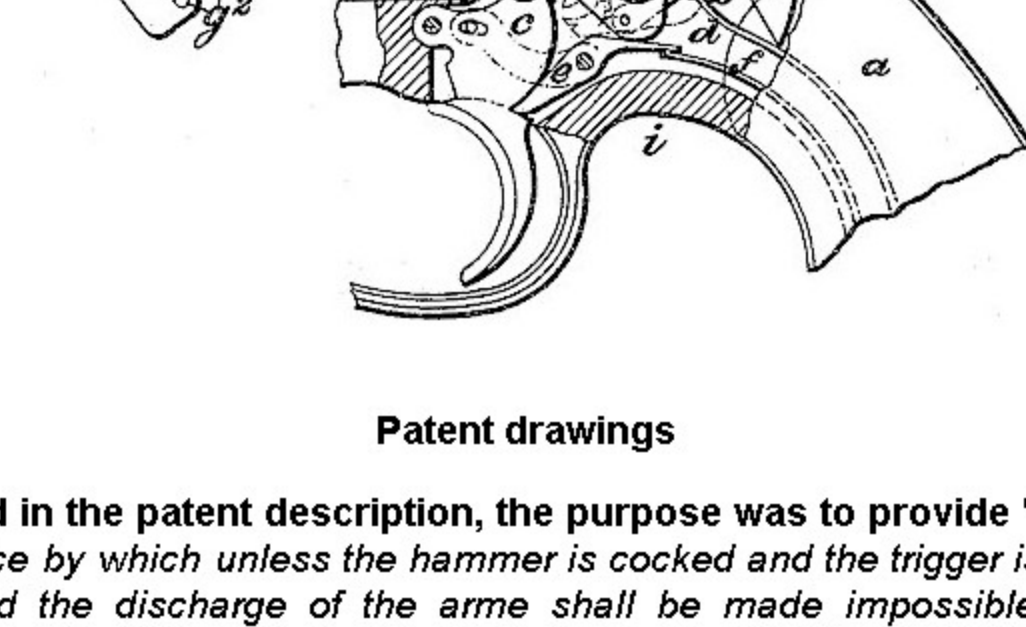
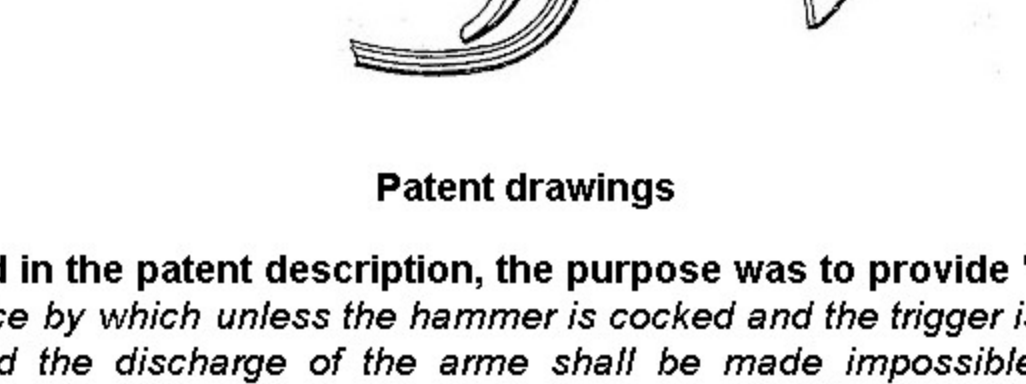
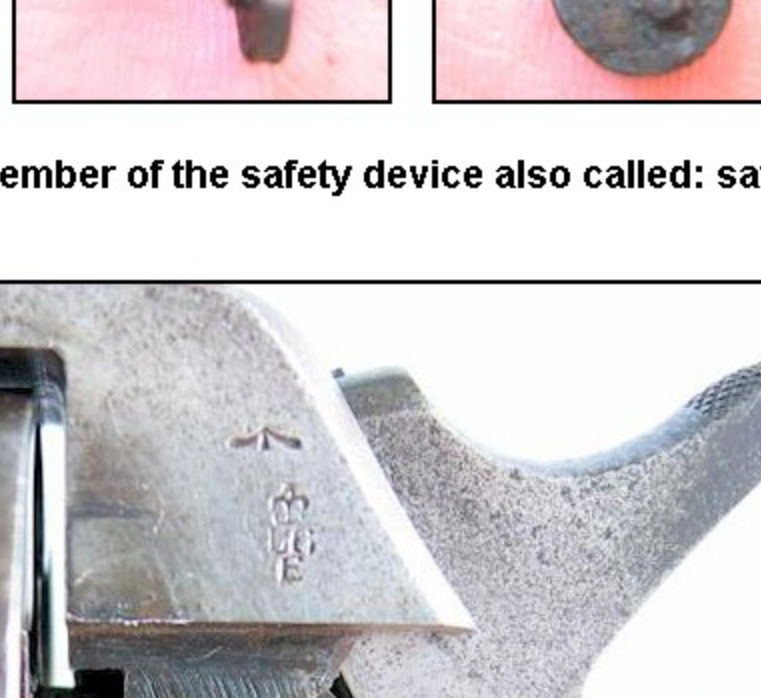


Fig.3.

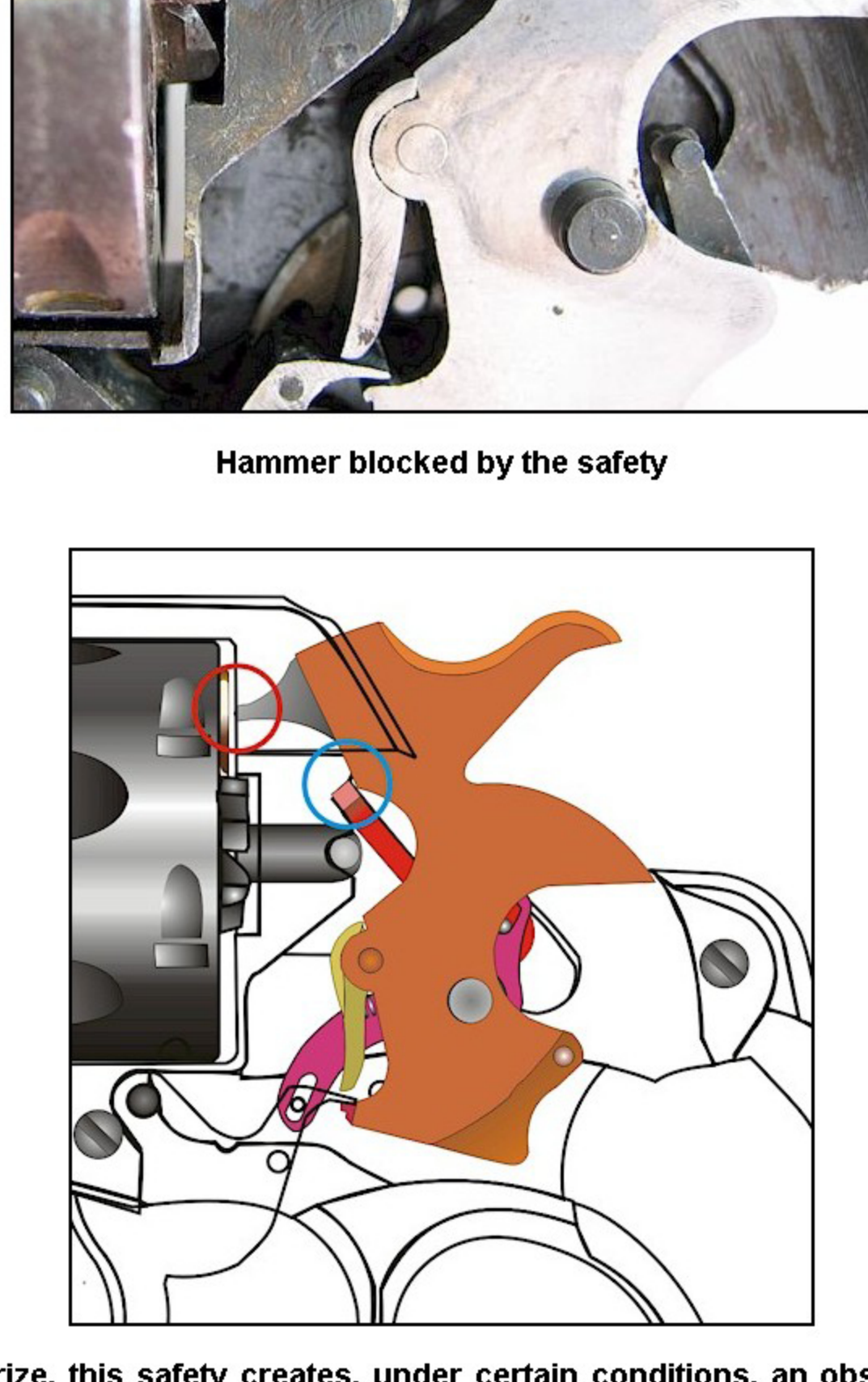


Patent drawings

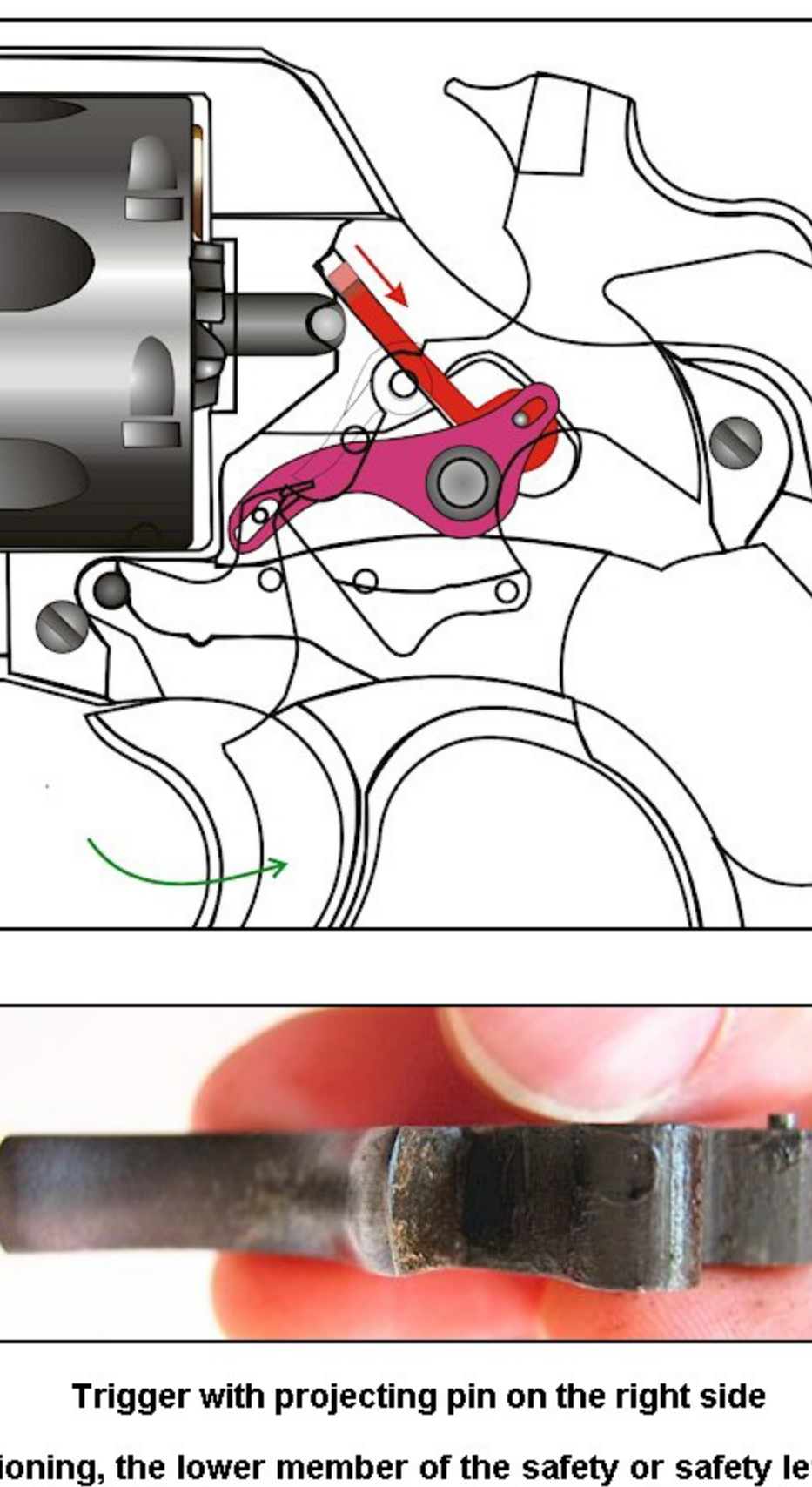
As explained in the patent description, the purpose was to provide "...a simple but reliable device by which unless the hammer is cocked and the trigger is regularly and fully operated the discharge of the arme shall be made impossible in order that unintentional or accidental firing shall be positively prevented even in case violent blows were struck upon the hammer in direction tending to drive its firing-point into contact with the primer of the cartridge..."



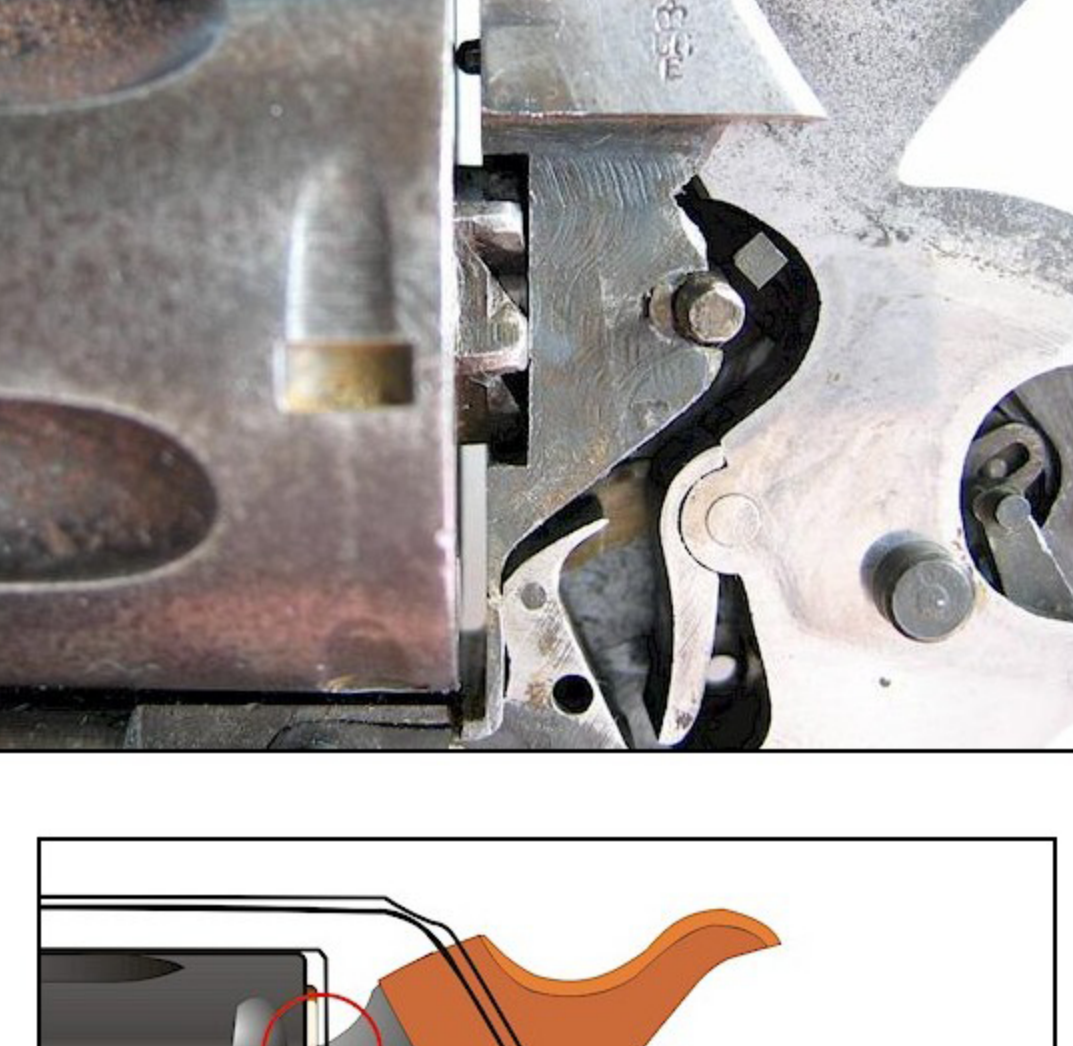
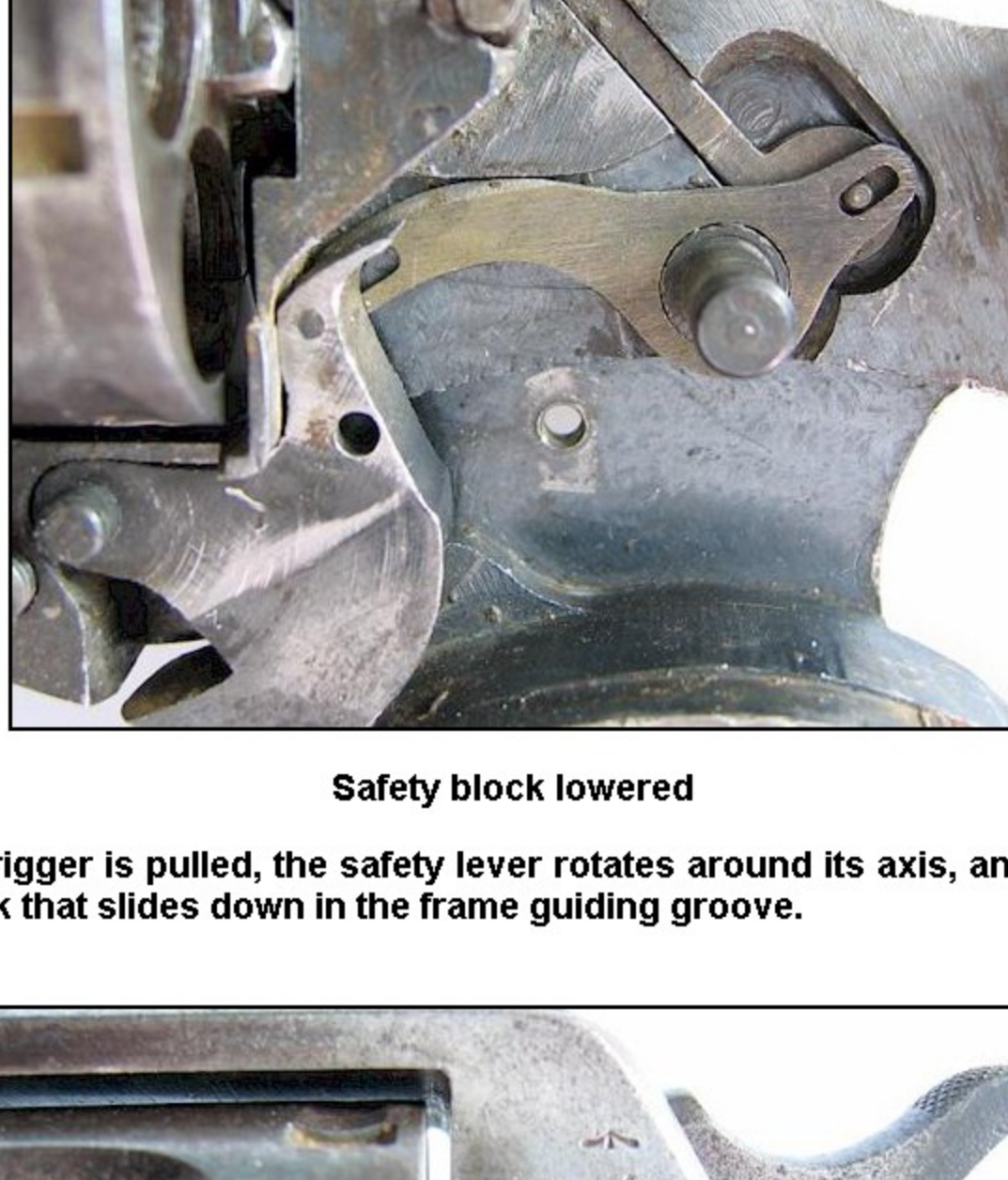
Upper member of the safety device also called: safety block



Hammer blocked by the safety

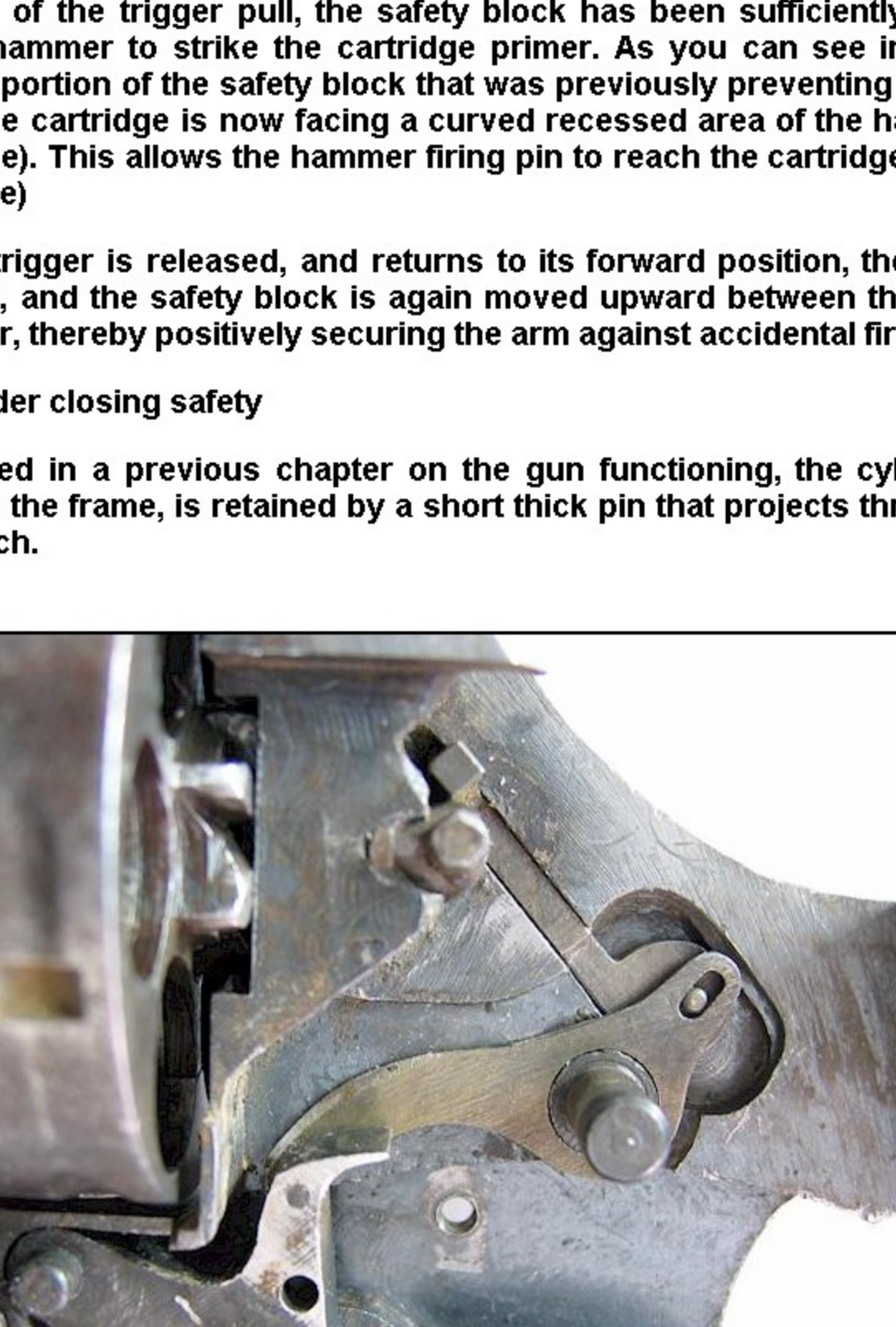


To summarize, this safety creates, under certain conditions, an obstacle on the path of the hammer. When the safety is "on", the hammer firing pin cannot reach the cartridge primer (red circle above) because the hammer head bears against the L shaped portion of the safety block (blue circle above).



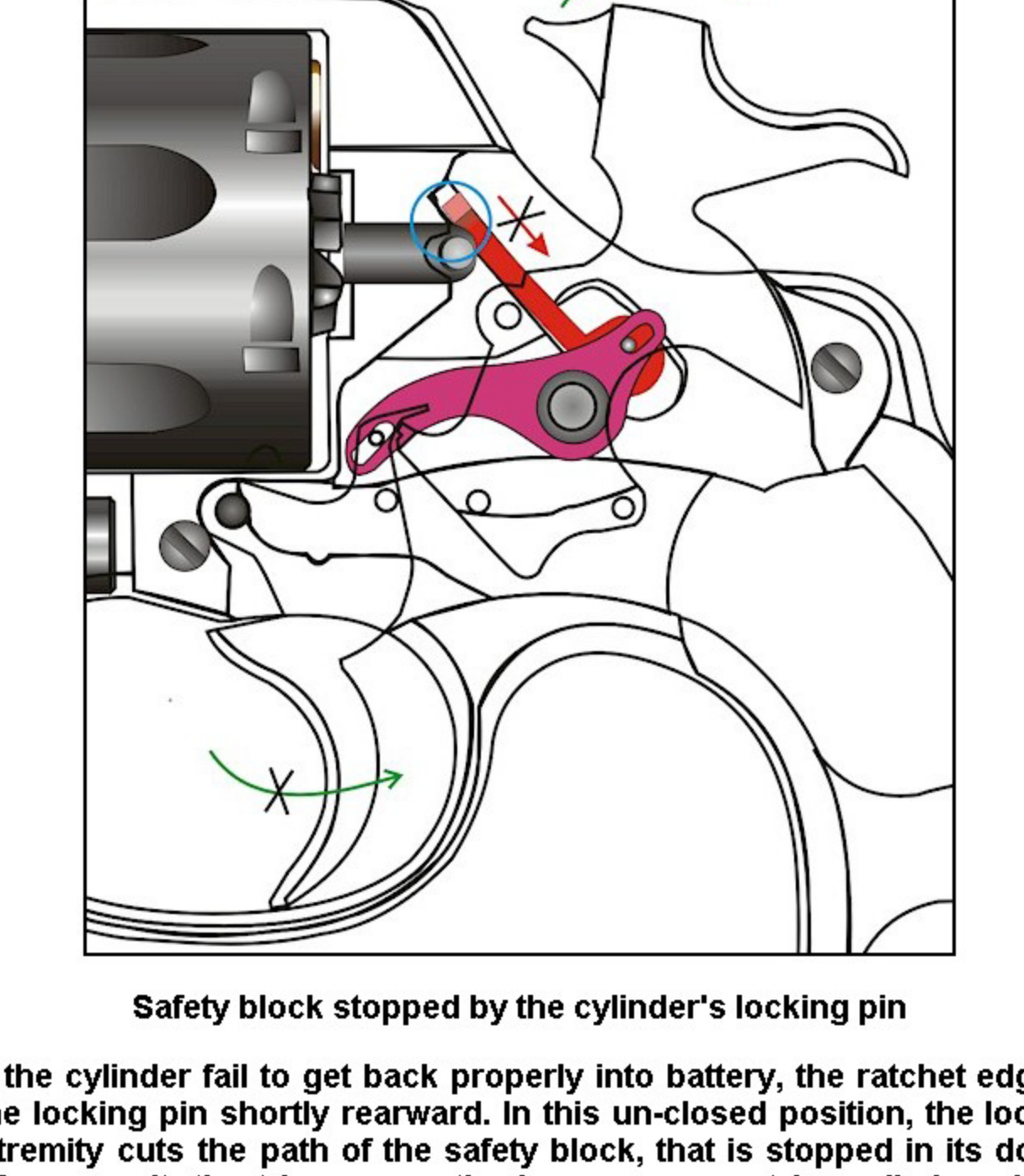
Trigger with projecting pin on the right side

As to the functioning, the lower member of the safety or safety lever is connected to the trigger by its slot that engages a small pin projecting on the right side of the trigger. The safety lever shares its pivot with the hammer. Its upper extremity actuates the safety block that has a projecting pin which engages a slot of the safety lever.



Safety block lowered

When the trigger is pulled, the safety lever rotates around its axis, and lowers the safety block that slides down in the frame guiding groove.



At the end of the trigger pull, the safety block has been sufficiently lowered to allow the hammer to strike the cartridge primer. As you can see in the sketch above, the portion of the safety block that was previously preventing the hammer to reach the cartridge is now facing a curved recessed area of the hammer (blue circle above). This allows the hammer firing pin to reach the cartridge primer (red circle above)

When the trigger is released, and returns to its forward position, the hammer is rebounded, and the safety block is again moved upward between the frame and the hammer, thereby positively securing the arm against accidental firing.

- The cylinder closing safety

As explained in a previous chapter on the gun functioning, the cylinder, when locked into the frame, is retained by a short thick pin that projects through a hole in the breech.

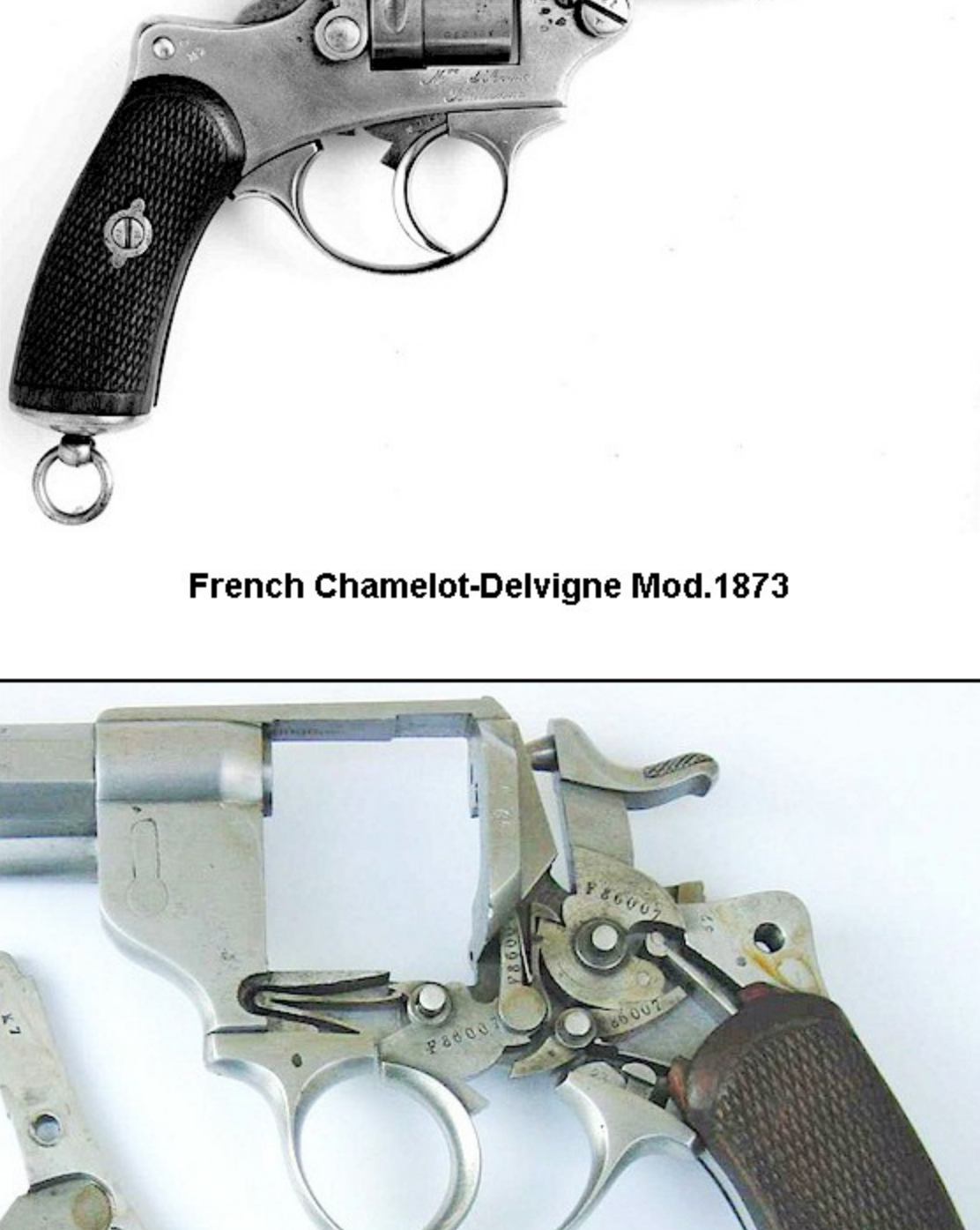
Cylinder's locking pin slightly retracted

Safety block stopped by the cylinder's locking pin

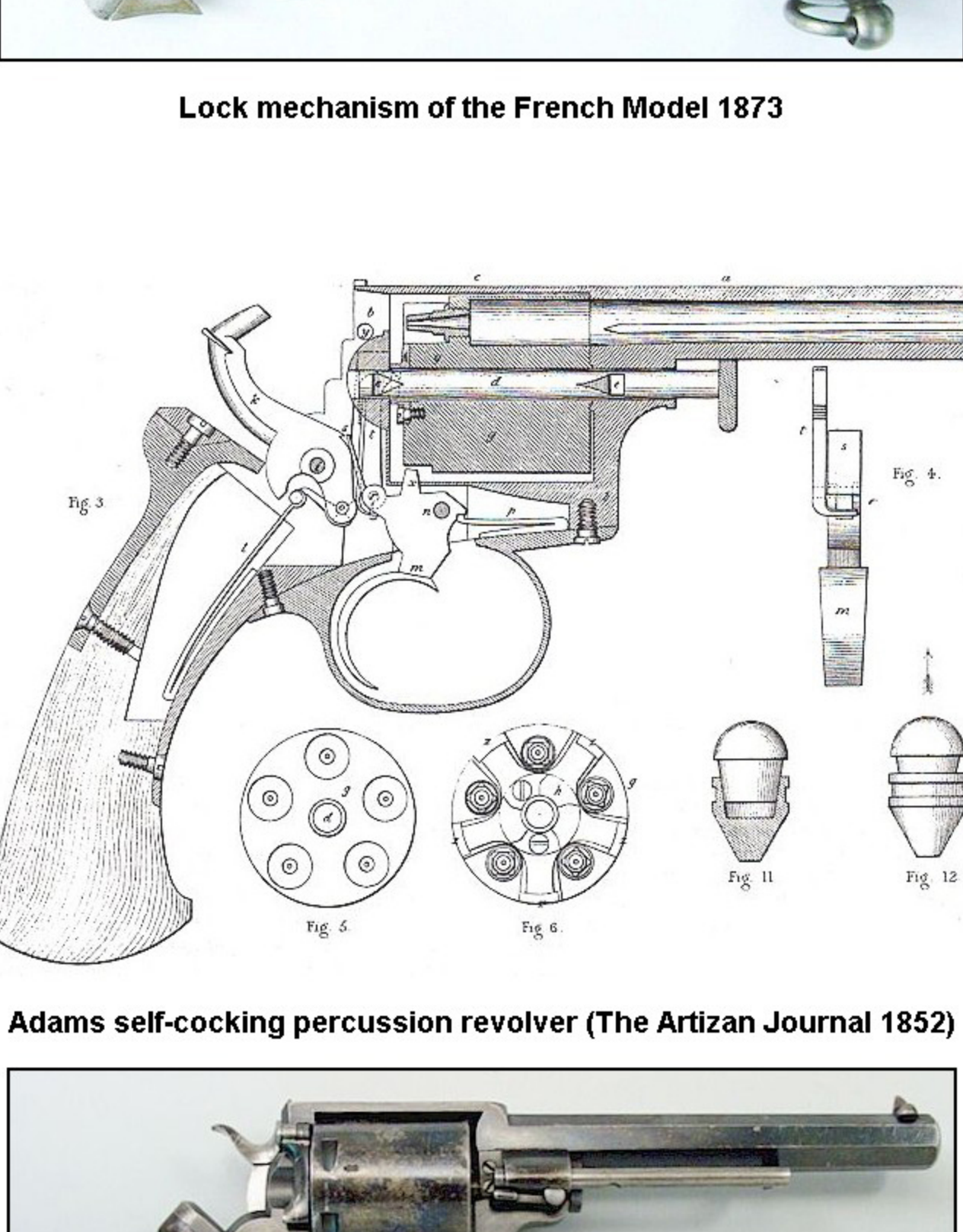
Should the cylinder fail to get back properly into battery, the ratchet edge would push the locking pin shortly rearward. In this un-closed position, the locking pin rear extremity cuts the trigger of the safety block, that is stopped in its downward move. As a result, the trigger, nor the hammer, cannot be pulled, and the gun cannot be fired until the cylinder is fully, and correctly, put into battery.

The early Colt double-action revolvers

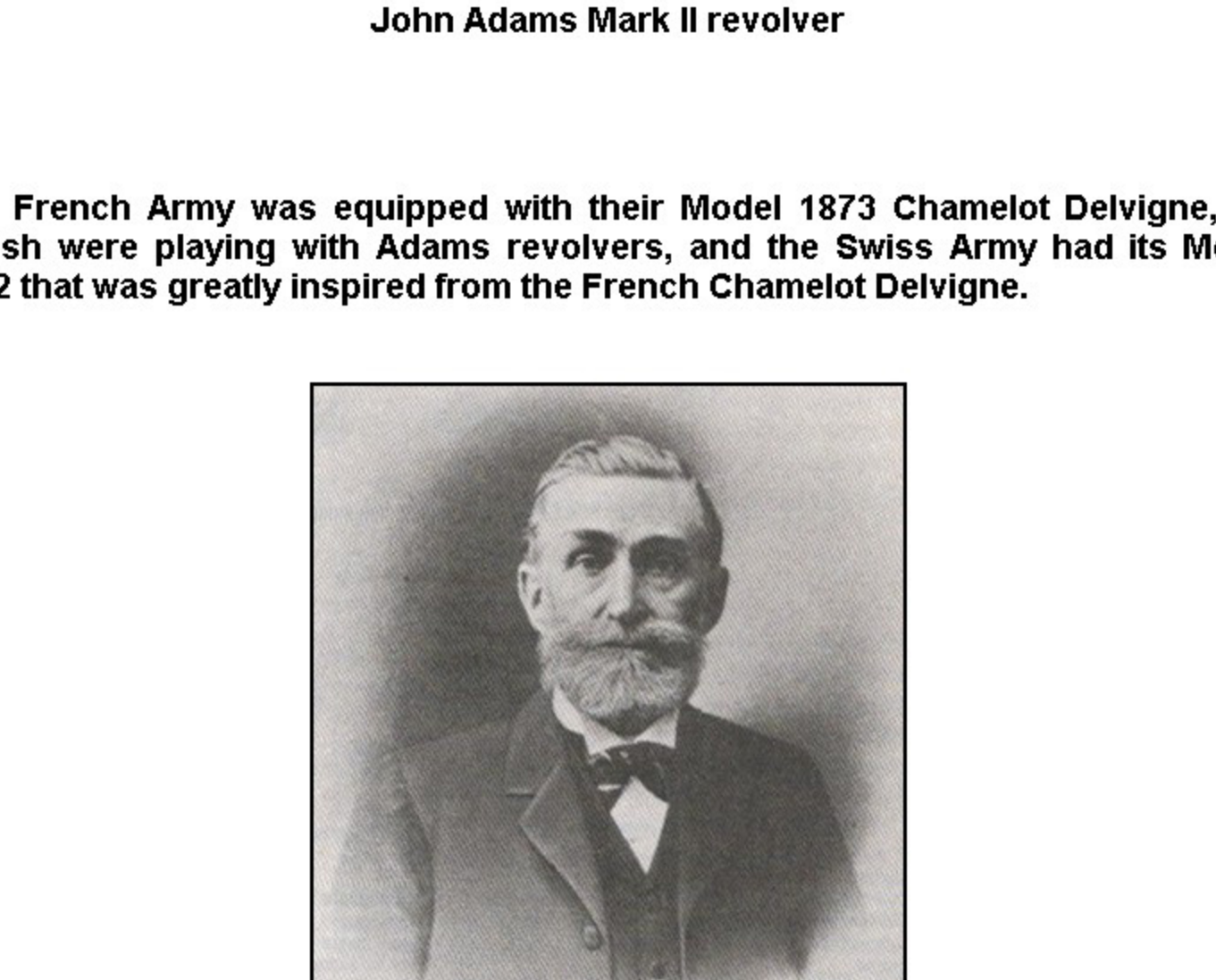
Its is not until 1877 that Colt offered a revolver able to shoot in double-action mode. Self-cocking revolvers however had been in use for many years prior to this date, mostly in European countries.



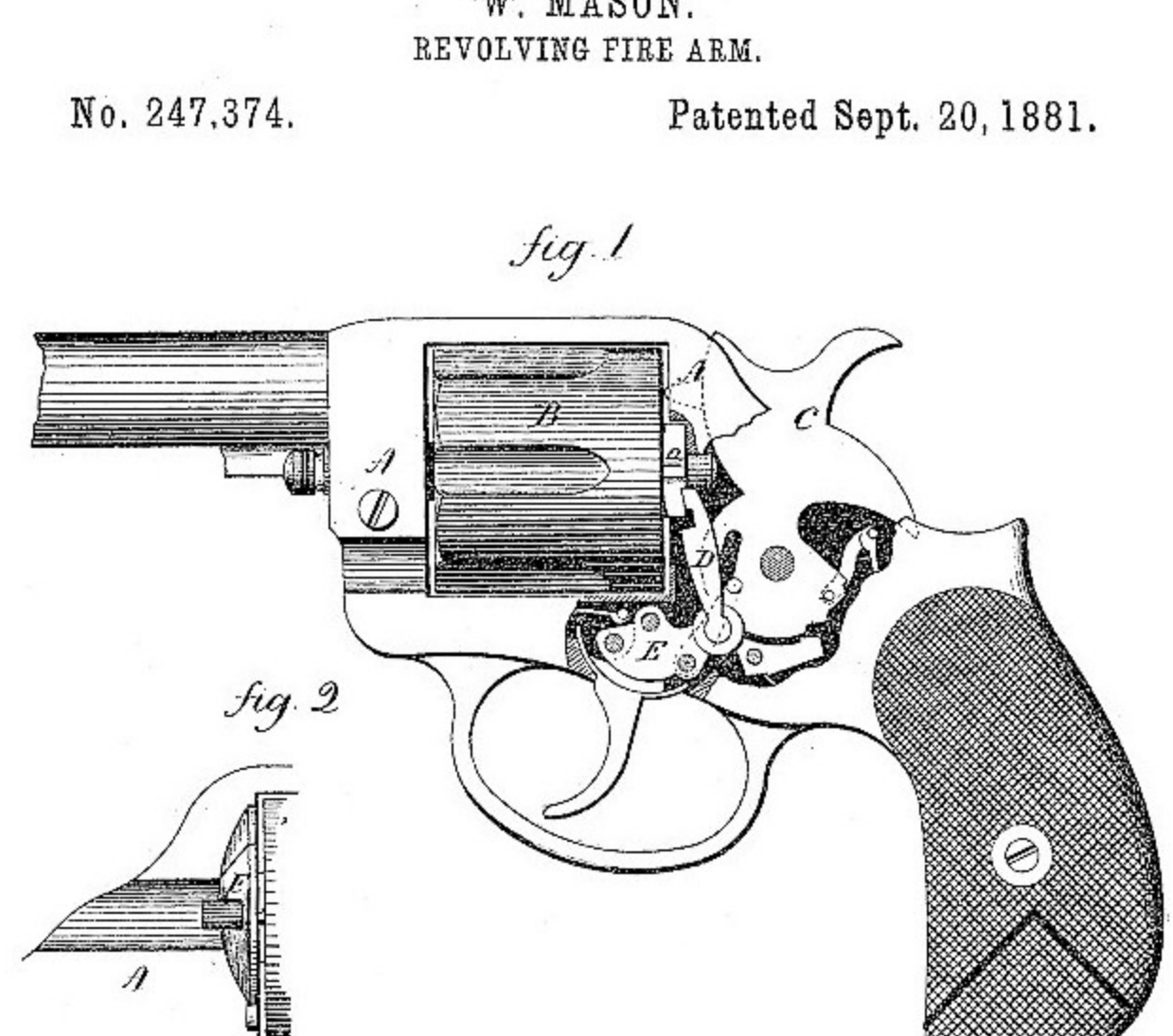
French Chamelot-Delvigne Mod.1873



Lock mechanism of the French Model 1873



Adams self-cocking percussion revolver (The Artizan Journal 1852)



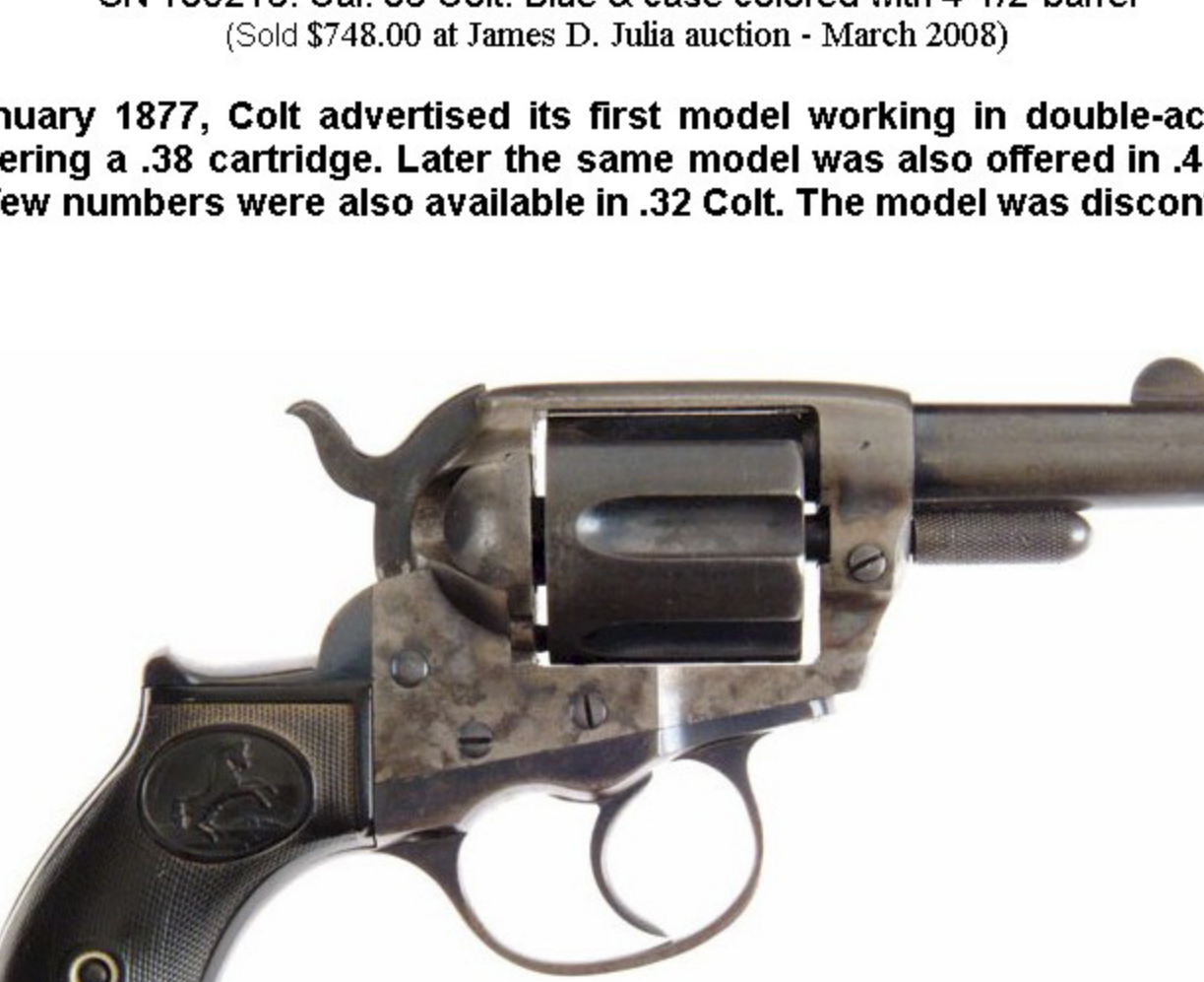
John Adams Mark II revolver

The French Army was equipped with their Model 1873 Chamelot Delvigne, the British were playing with Adams revolvers, and the Swiss Army had its Model 1872 that was greatly inspired from the French Chamelot Delvigne.



William Mason (1837 - 1913)

W. MASON.
REVOLVING FIRE ARM.
No. 247,374. Patented Sept. 20, 1881.



William Mason's patent for the Colt 1878 double-action revolver

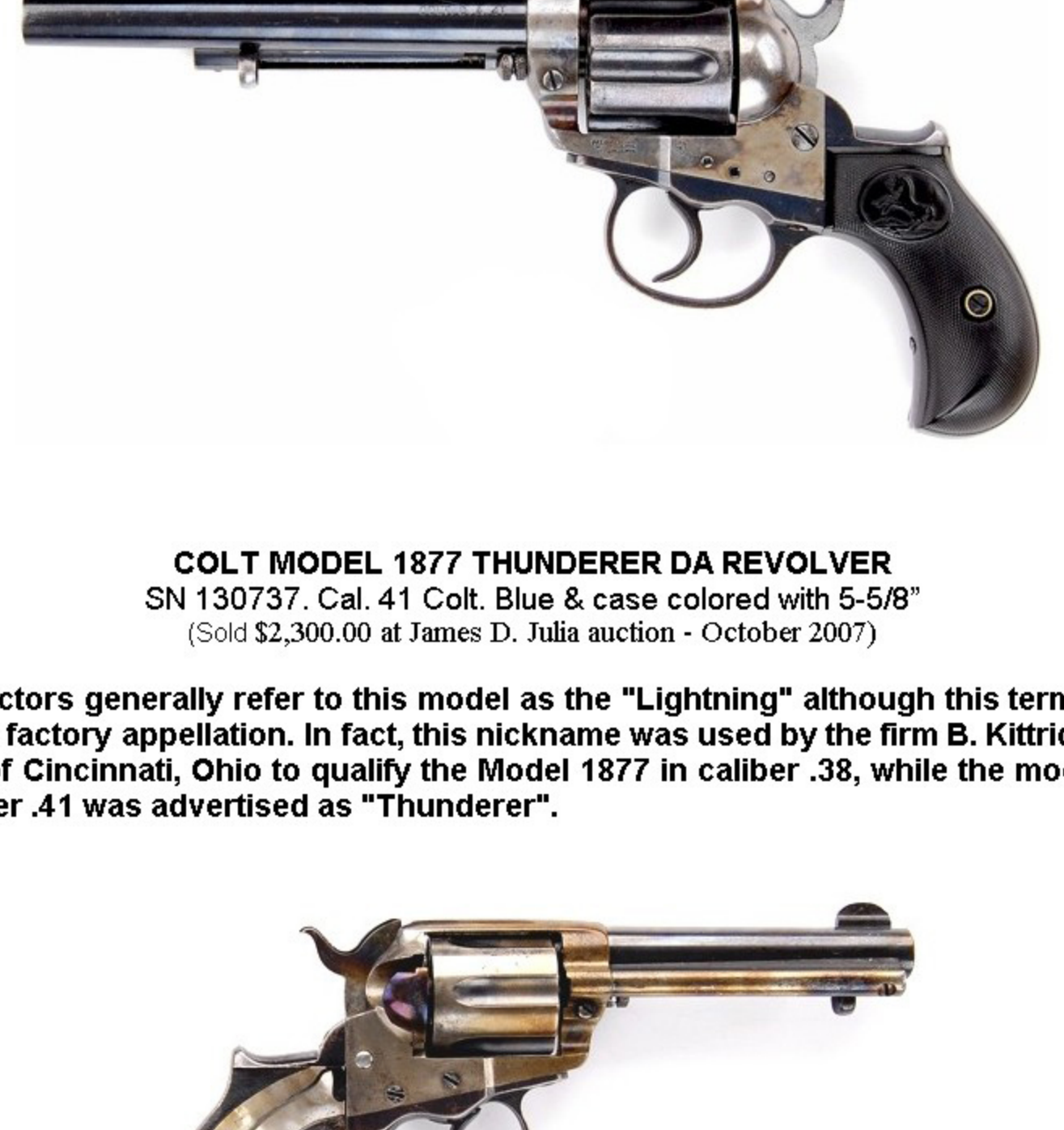
William Mason was the man who developed the first Colt double-action revolver in 1876. As a result of his work he received several patents (128,644 July 2, 1872 - 247,938 October 4, 1881 - 248,190 October 11, 1881 - 247,374 Sept. 20, 1881).

Model 1877 "Lightning" & "Thunderer"

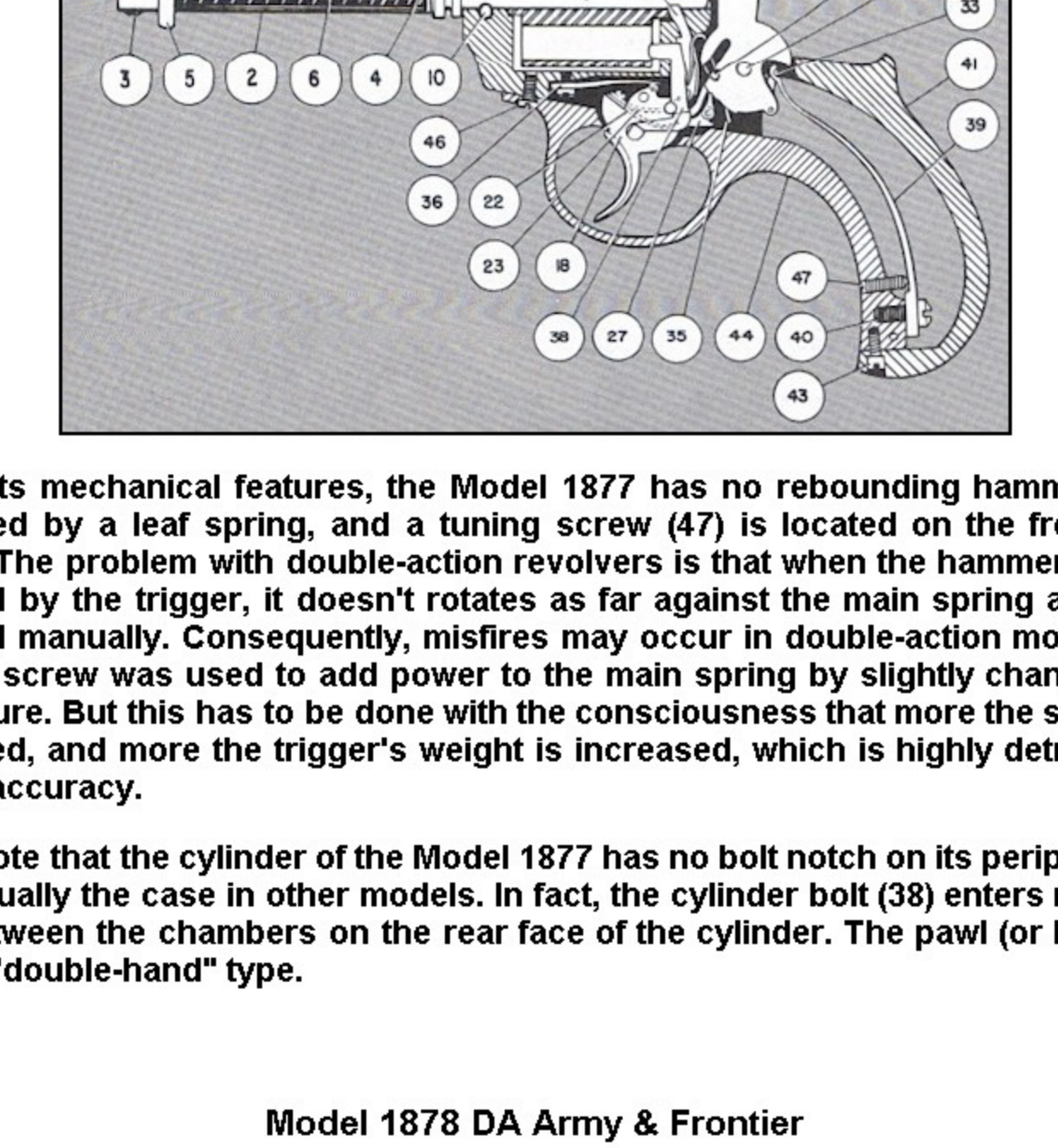


COLT MODEL 1877 LIGHTNING DA REVOLVER
SN 150218. Cal. 38 Colt. Blue & case colored with 4-1/2" barrel
(Sold \$748.00 at James D. Julia auction - March 2008)

On January 1877, Colt advertised its first model working in double-action and chambering a .38 cartridge. Later the same model was also offered in .41 caliber and a few numbers were also available in .32 Colt. The model was discontinued in 1910.

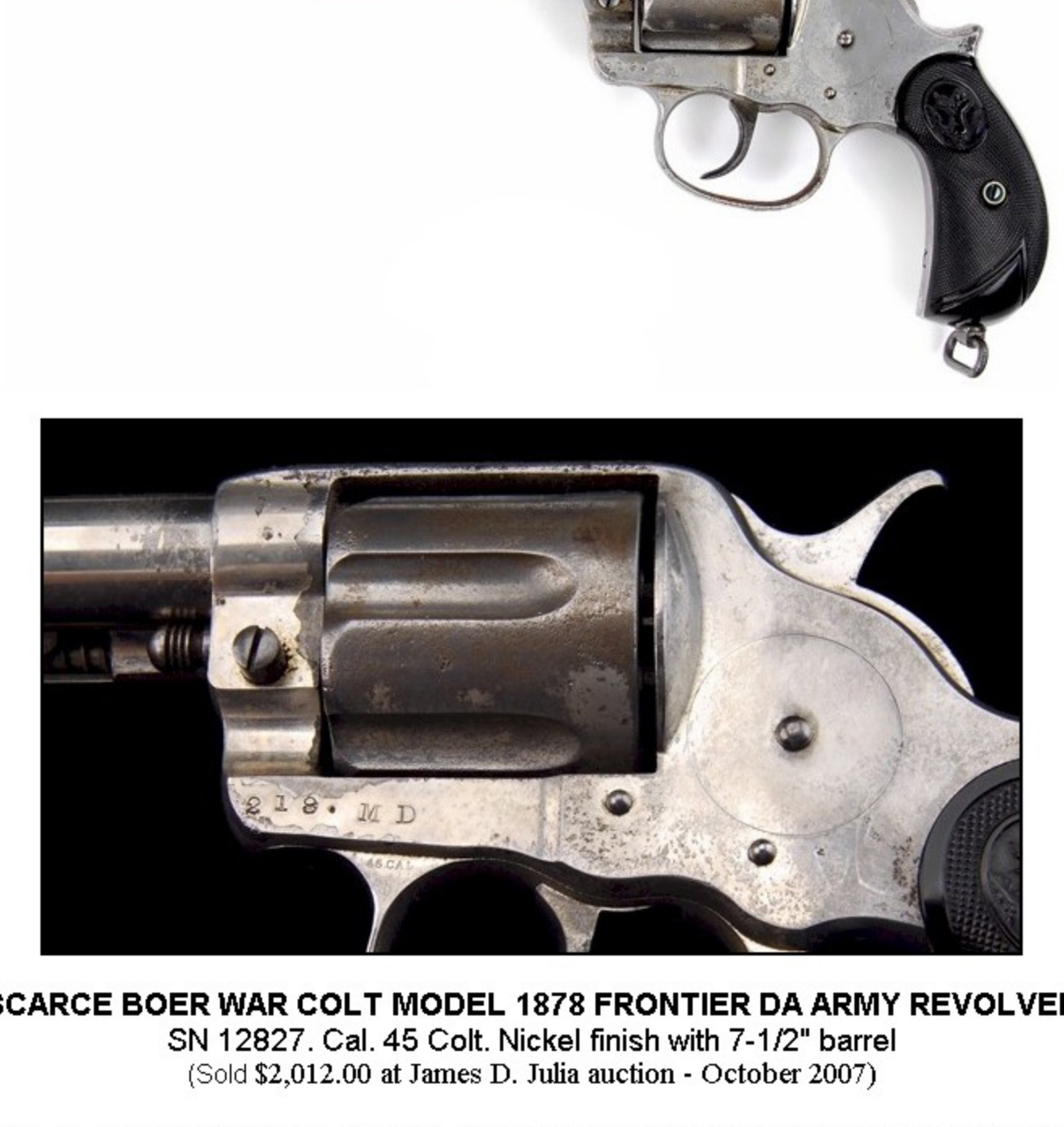


COLT LIGHTNING SHERIFF'S MODEL DA REVOLVER
Cal. 38 Colt. SN 160330 with 2-1/2" barrel
(Sold \$1,725.00 at James D. Julia auction - October 2006)



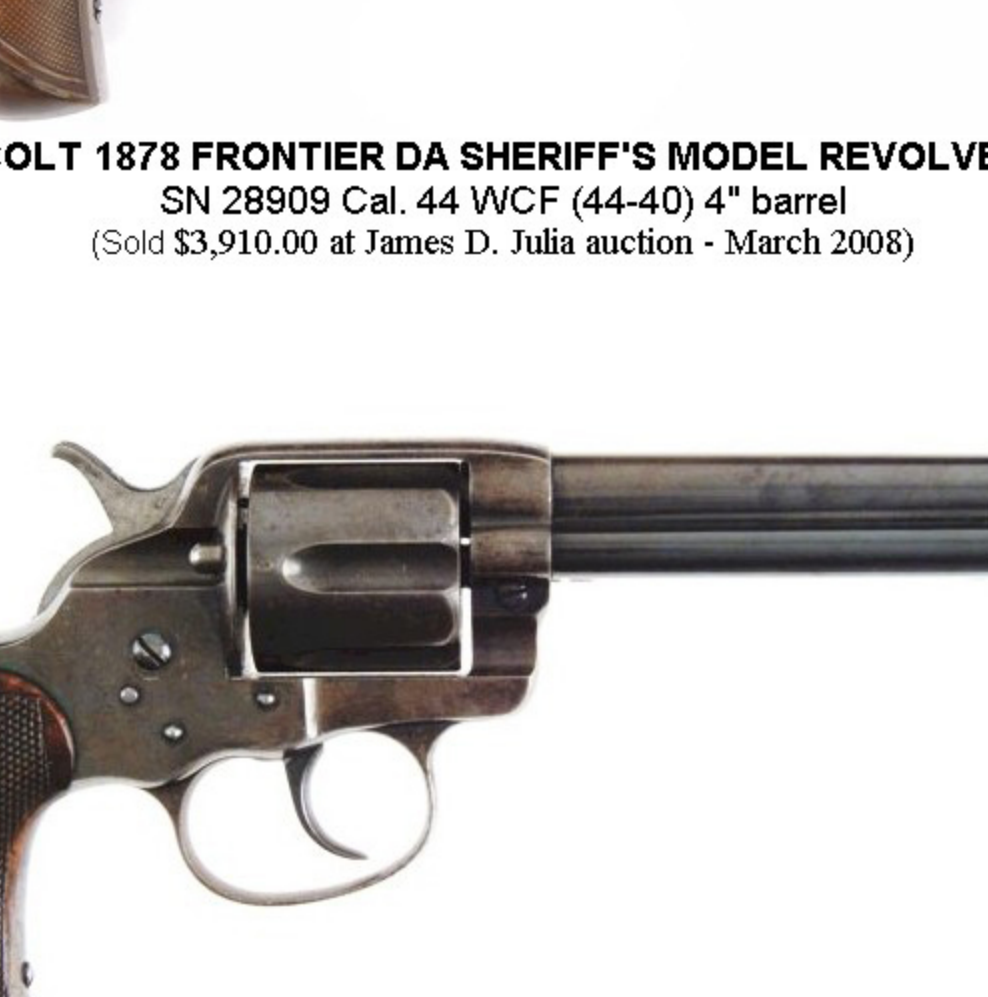
COLT MODEL 1877 DA LIGHTNING SHERIFF'S MODEL REVOLVER
SN 129261. Cal. 38 Colt. Nickel finish with 3-1/2" barrel
(Sold \$2,300.00 at James D. Julia auction - October 2007)

This model could be fitted with barrels of various lengths starting at 2" until 7 1/2", and some of them were not carrying an ejector rod.



COLT MODEL 1877 THUNDERER DA REVOLVER
SN 130737. Cal. 41 Colt. Blue & case colored with 5-5/8" barrel
(Sold \$2,012.00 at James D. Julia auction - October 2007)

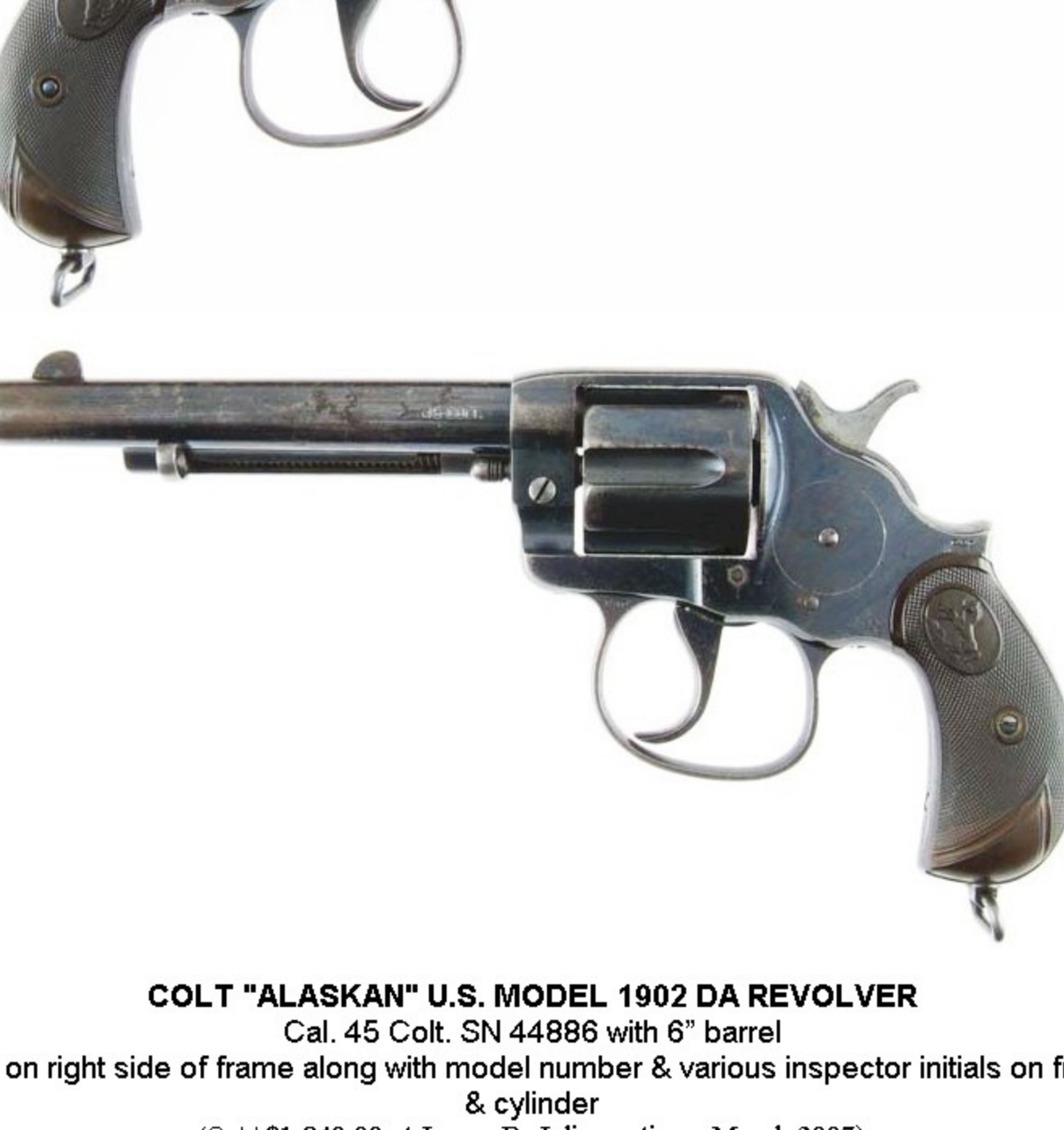
Collectors generally refer to this model as the "Lightning" although this term was not a factory appellation. In fact, this nickname was used by the firm B. Kittridge & Co. of Cincinnati, Ohio to qualify the Model 1877 in caliber .38, while the model in caliber .41 was advertised as "Thunderer".



As to its mechanical features, the Model 1877 has no rebounding hammer, it is powered by a leaf spring, and a tuning screw (47) is located on the front grip strap. The problem with double-action revolvers is that when the hammer is self-cocked by the trigger, it doesn't rotate as far against the main spring as when cocked manually. Consequently, misfires may occur in double-action mode. The tuning screw was used to add power to the main spring by slightly changing its curvature. But this has to be done with the consciousness that more the spring is stiffened, and more the trigger's weight is increased, which is highly detrimental to the accuracy.

Also note that the cylinder of the Model 1877 has no bolt notch on its periphery as it is usually the case in other models. In fact, the cylinder bolt (38) enters notches cut between the chambers on the rear face of the cylinder. The pawl (or hand) is of the "double-hand" type.

Model 1878 DA Army & Frontier



SCARCE BOER WAR COLT MODEL 1878 FRONTIER DA ARMY REVOLVER
SN 12827. Cal. 45 Colt. Nickel finish with 7-1/2" barrel
(Sold \$2,012.00 at James D. Julia auction - October 2007)

By 1878, a new model was offered. Contrarily to the previous DA model, this one had a grip integral with the frame, and a circular plate on the left side to give access to the internal parts. The cylinder locking was also different as it was not performed through notches on the outer surface, or the rear face of the cylinder, but was effected directly on the ratchet.

Introduced first in .45 Colt caliber, and a little time later in .44-40 WCF, the great majority of the DA Army and Frontier revolvers are found in these calibers, but they were also declined in such calibers as : .38-40 WCF, .32-20 WCF, .450, .455 and .476 Eley for the London trade. Colt catalogs also stated that the model could be had in .38 or .41 long and short Colt calibers, and .44 S&W.

COLT 1878 FRONTIER DA SHERIFF'S MODEL REVOLVER
SN 28909 Cal. 44 WCF (44-40) 4" barrel
(Sold \$3,910.00 at James D. Julia auction - March 2008)

COLT MODEL 1878 FRONTIER DA REVOLVER
Cal. 45LC. 5-1/2" barrel SN 13747
(Sold \$1,725.00 at James D. Julia auction - October 2006)

COLT MODEL 1878 FRONTIER DA REVOLVER
Cal. 44 WCF (44-40). SN 23943. Blue finish with 7-1/2" bbl
(Sold \$3,162.00 at James D. Julia auction - October 2006)

The revolvers equipped with 3 1/2" and 4" barrels had no ejector, while revolvers with 4 3/4", 5 1/2", 7 1/2" barrels had an ejector. The Model 1902 U.S. was fitted with a 6" barrel. Military models, and some civilian arms, were fitted with a lanyard ring at the butt.

COLT "ALASKAN" U.S. MODEL 1902 DA REVOLVER
Cal. 45 Colt. SN 44886 with 6" barrel
"US" on right side of frame along with model number & various inspector initials on frame & cylinder
(Sold \$1,840.00 at James D. Julia auction - March 2007)

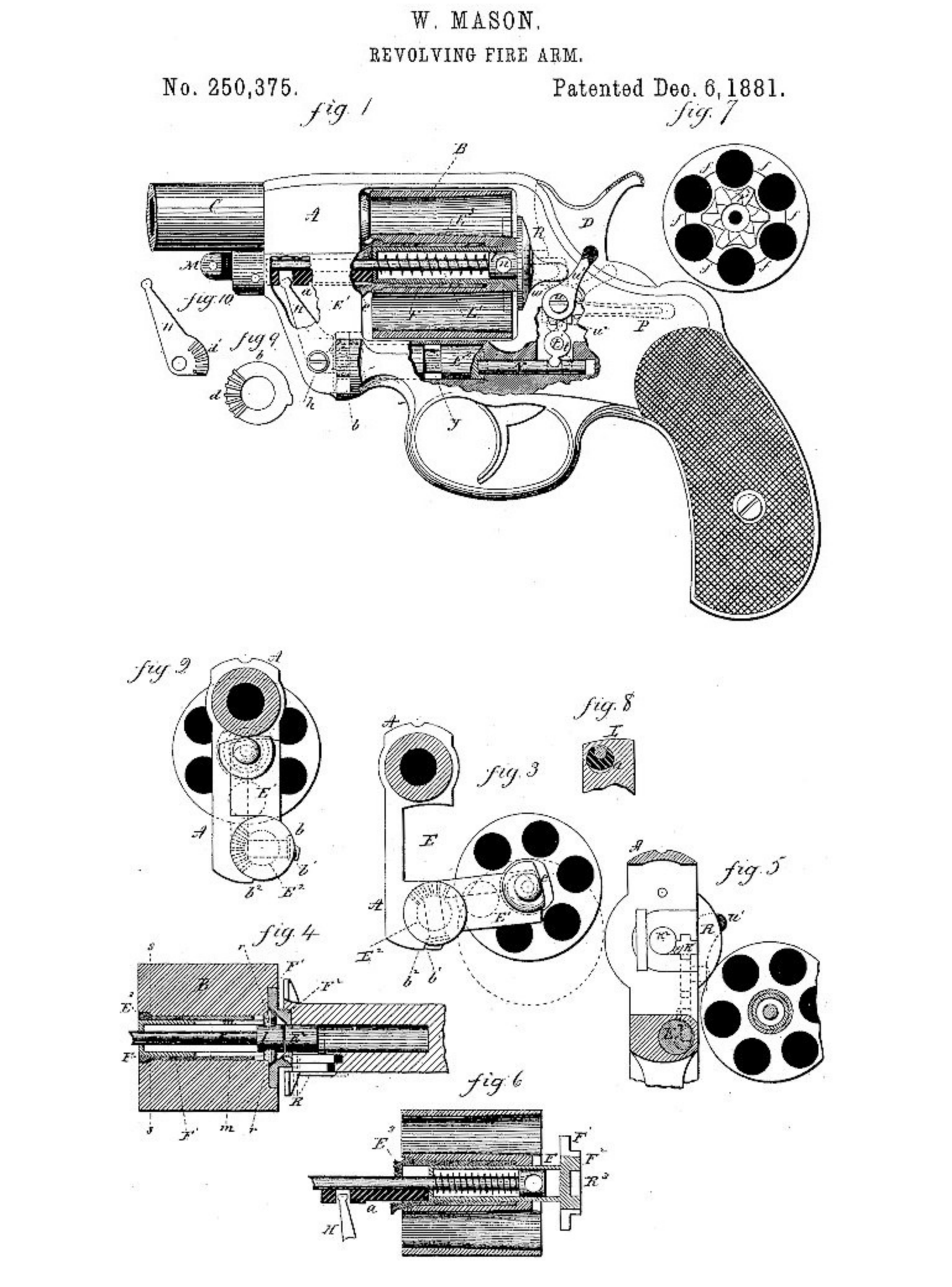
The US Military was very reluctant to approve a revolver that was found, after a series of tests, to be liable to accidental discharge, and carrying a weak main spring that caused many misfires when used in double-action mode.

In 1902 however, Colt received a Government order for approximately 5000 DA revolvers that had to receive some modifications. These modifications included a 6" barrel, a very large trigger guard, and a correspondingly long trigger. The serial number of these special models run in the 43,000 - 48,000 range.

Early development of the Colt swing-out cylinder double-action revolver

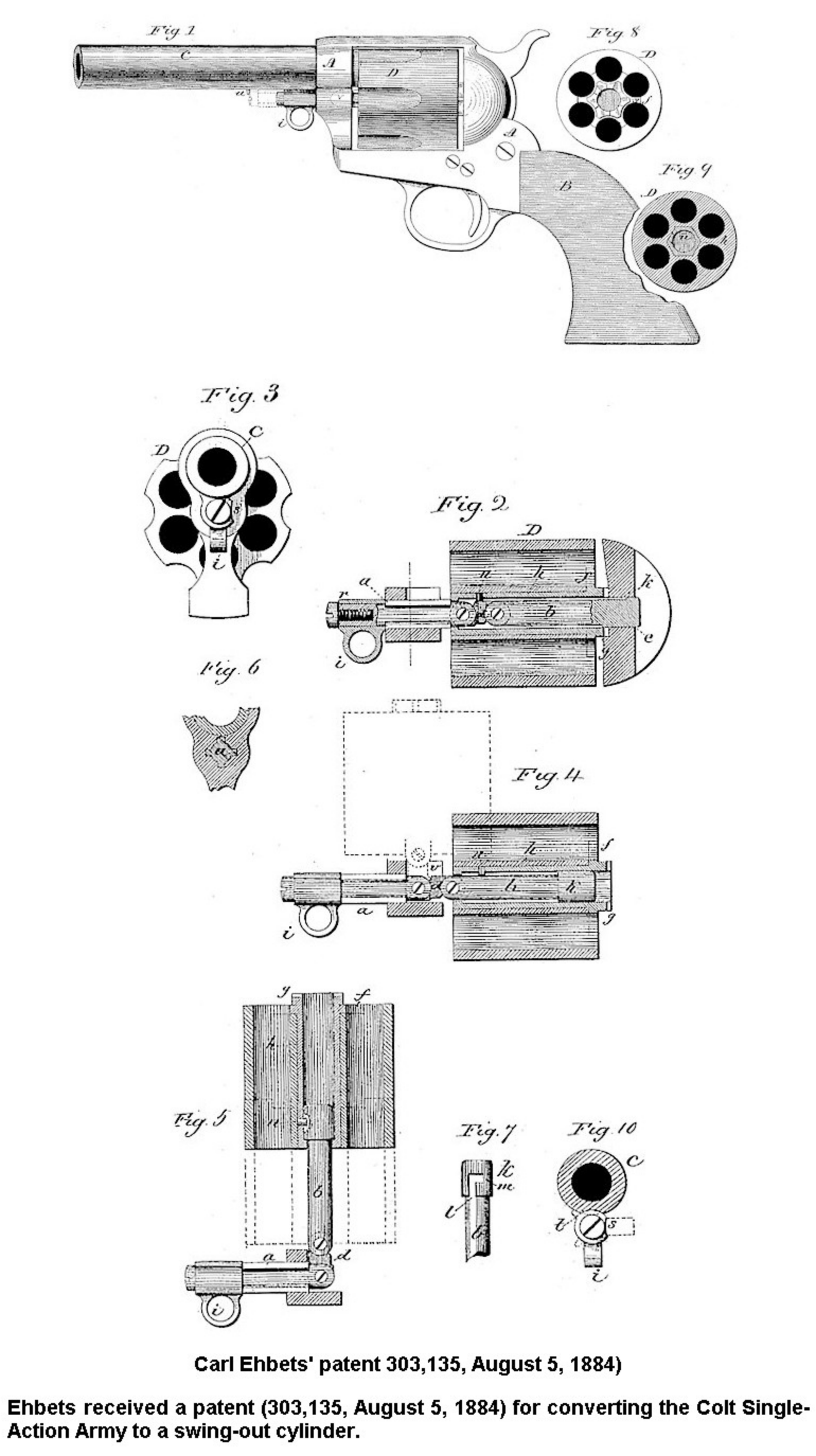
The self-cocking system being well on track, Colt set out to enhance the system by improving the way the gun could be loaded and unloaded.

Again William Mason was solicited to find something that could match or better Smith & Wesson's top break guns with simultaneous ejection system.



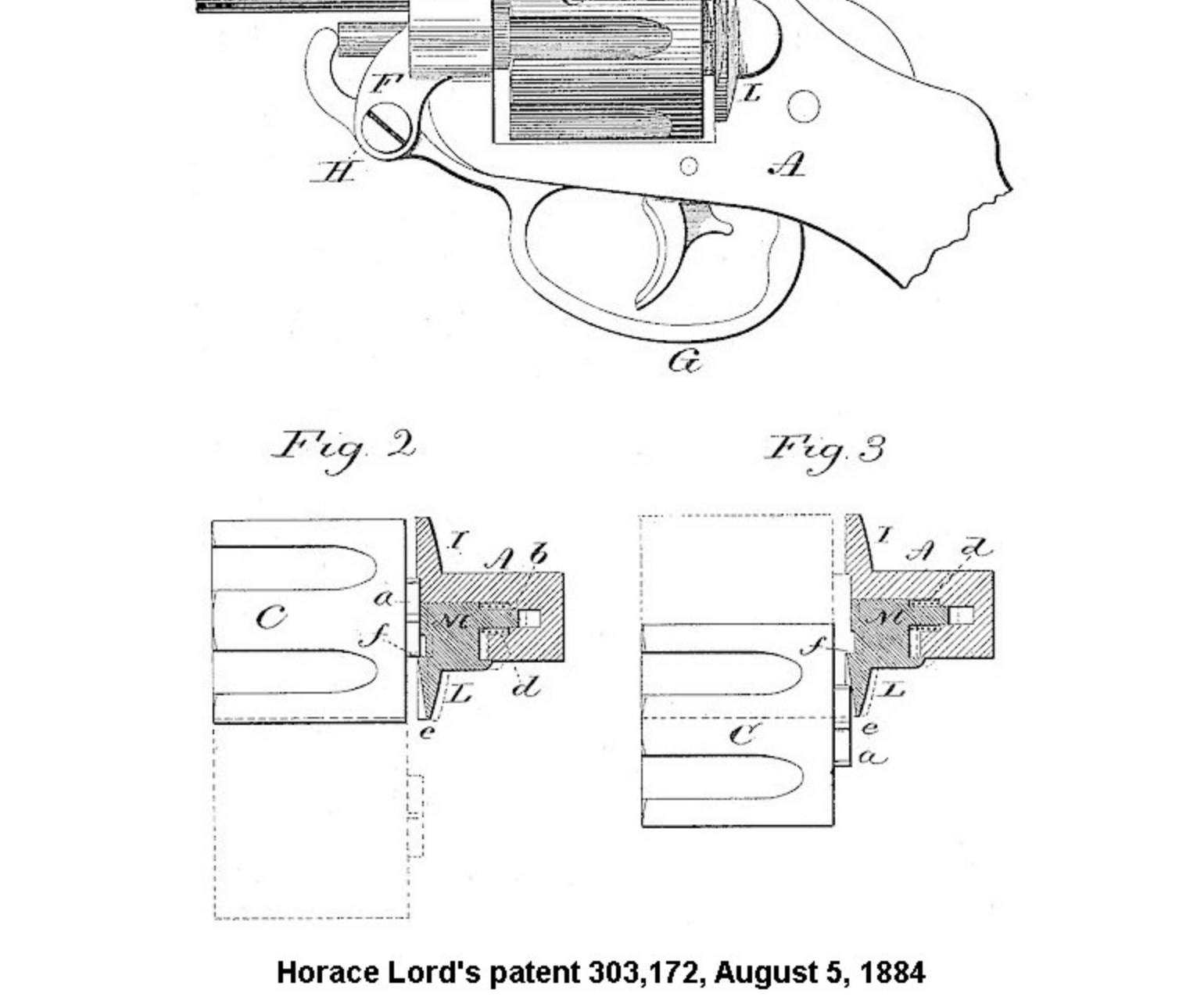
At first William Mason tried to design a cylinder mounted on a hinged assembly, called a crane, that could swing to one side of the frame and operate automatically the ejector when the cylinder was at full swing. But the automatic ejector idea was eventually canceled to the benefit of an ejector operated manually. For this work, William Mason was granted two patents in 1881 (249,649 Nov. 15 - 250,375 Dec. 6).

Horace Lord and Carl Ehbets were also required to think about a practical swing-out system. Both received several patents that were attributed to Colt.

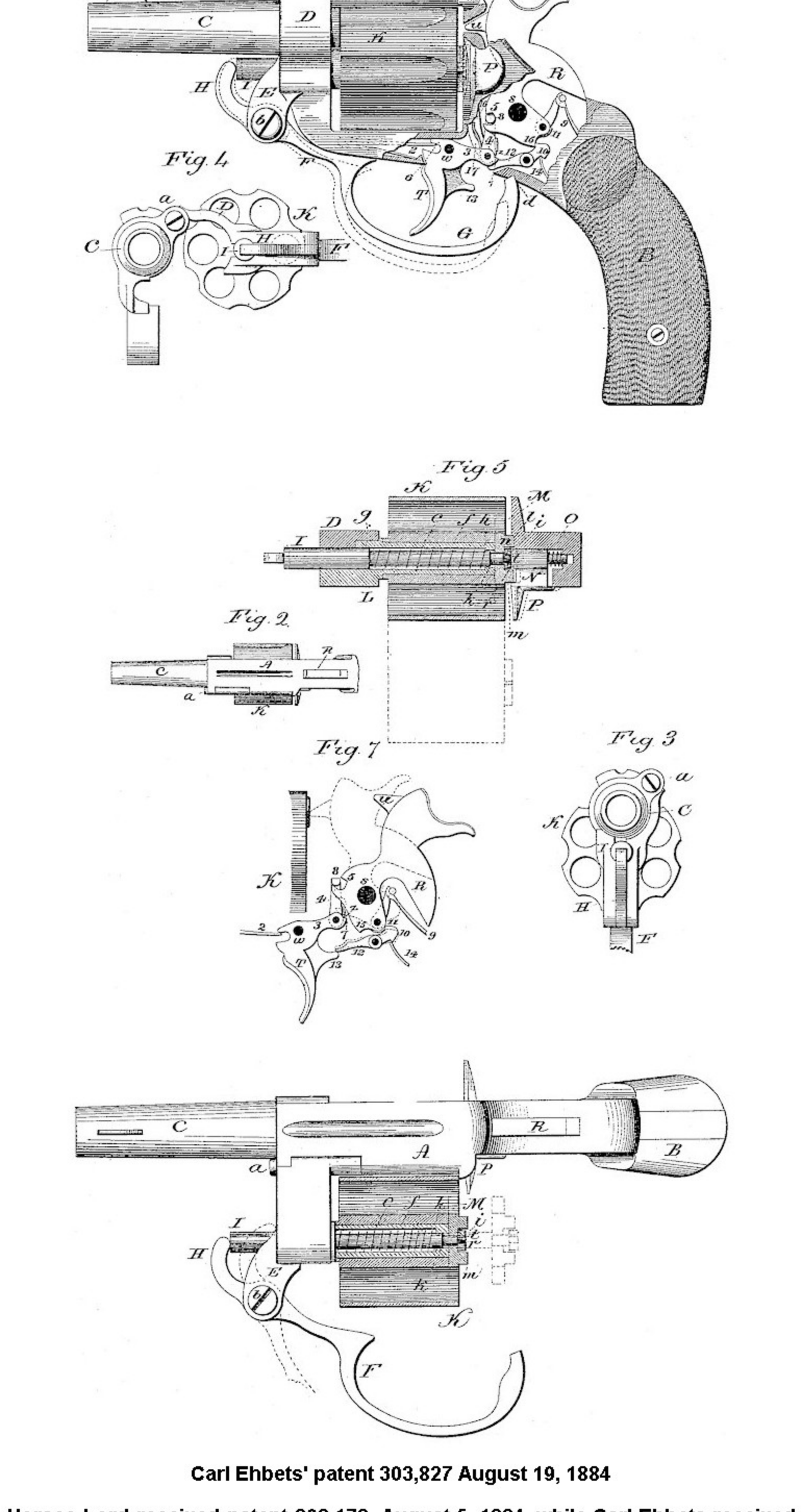


Carl Ehbets' patent 303,135, August 5, 1884)

Ehbets received a patent (303,135, August 5, 1884) for converting the Colt Single-Action Army to a swing-out cylinder.

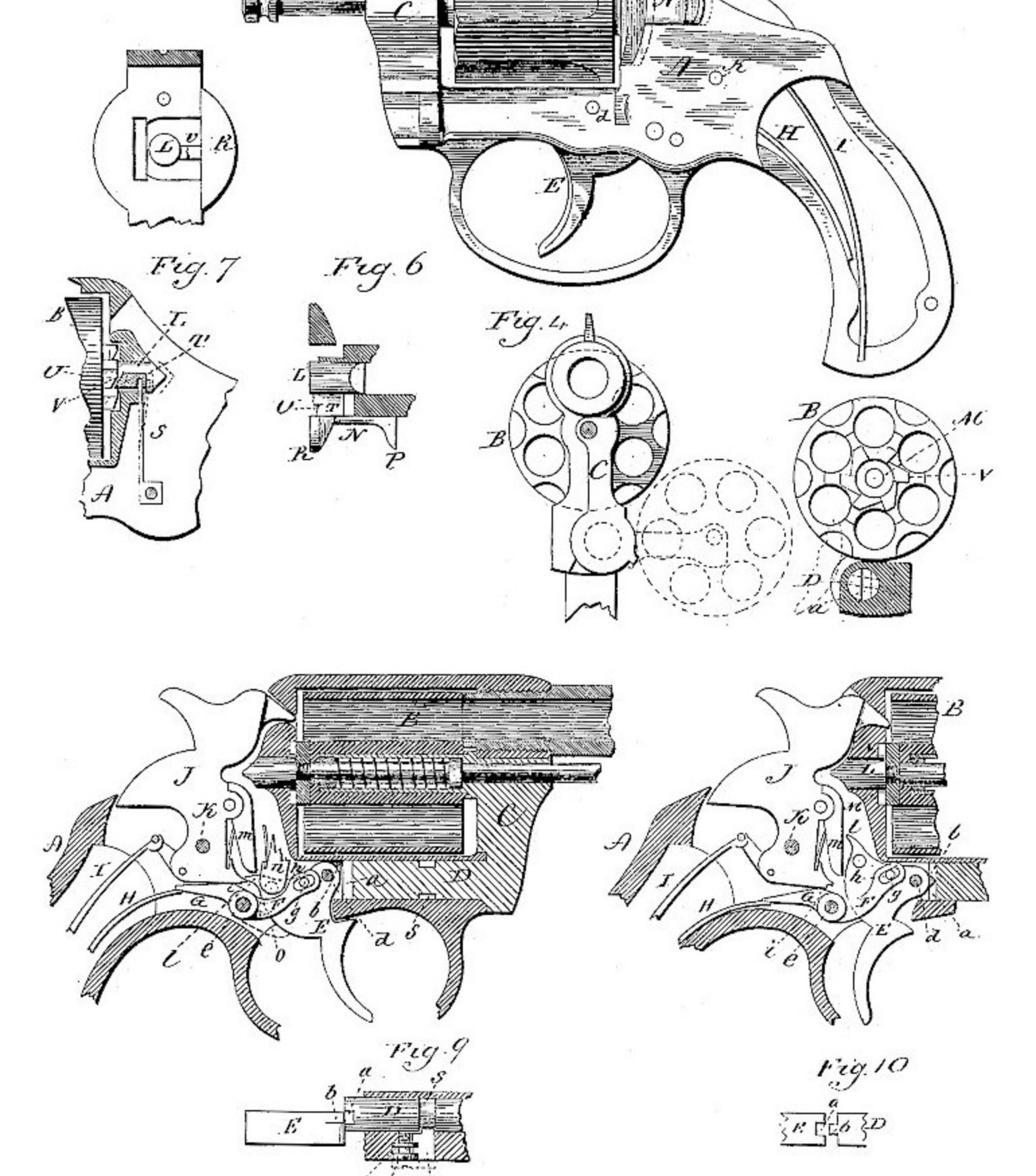


Horace Lord's patent 303,172, August 5, 1884



Carl Ehbets' patent 303,827 August 19, 1884

Horace Lord received patent 303,172, August 5, 1884, while Carl Ehbets received patent 303,827 August 19, 1884, each for their works on the top-swinging cylinder.

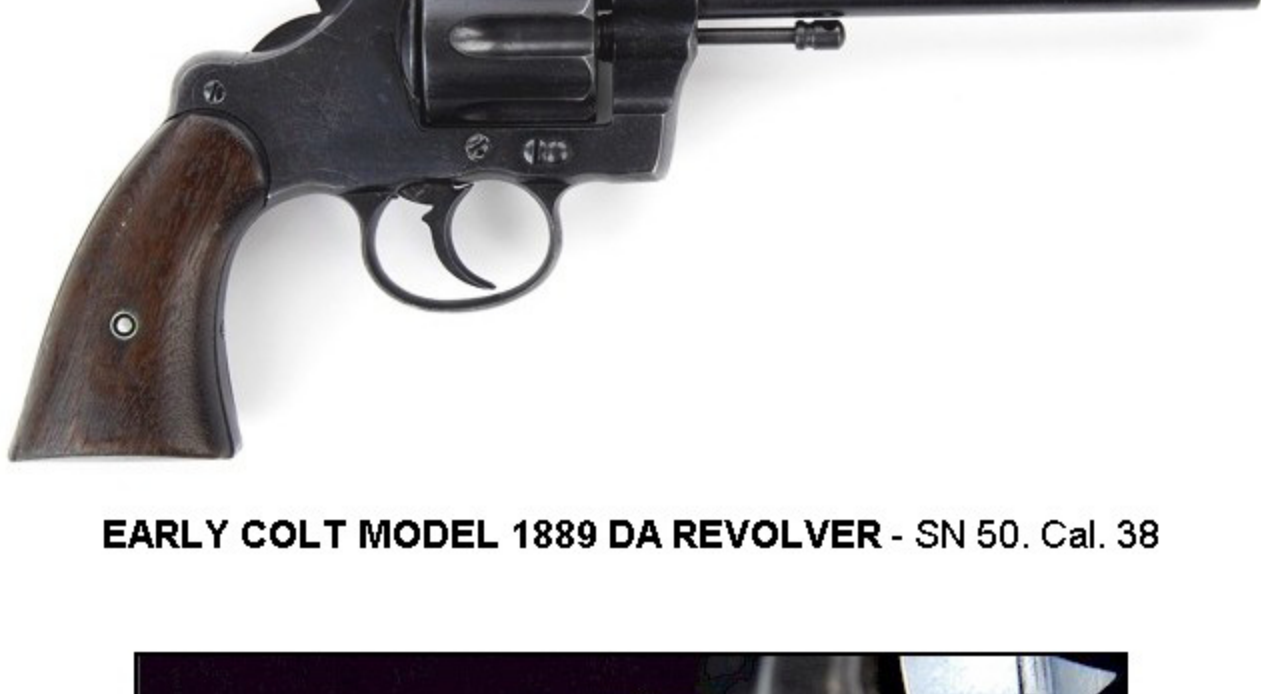


Carl Ehbets' patent 392,503 November 6, 1888

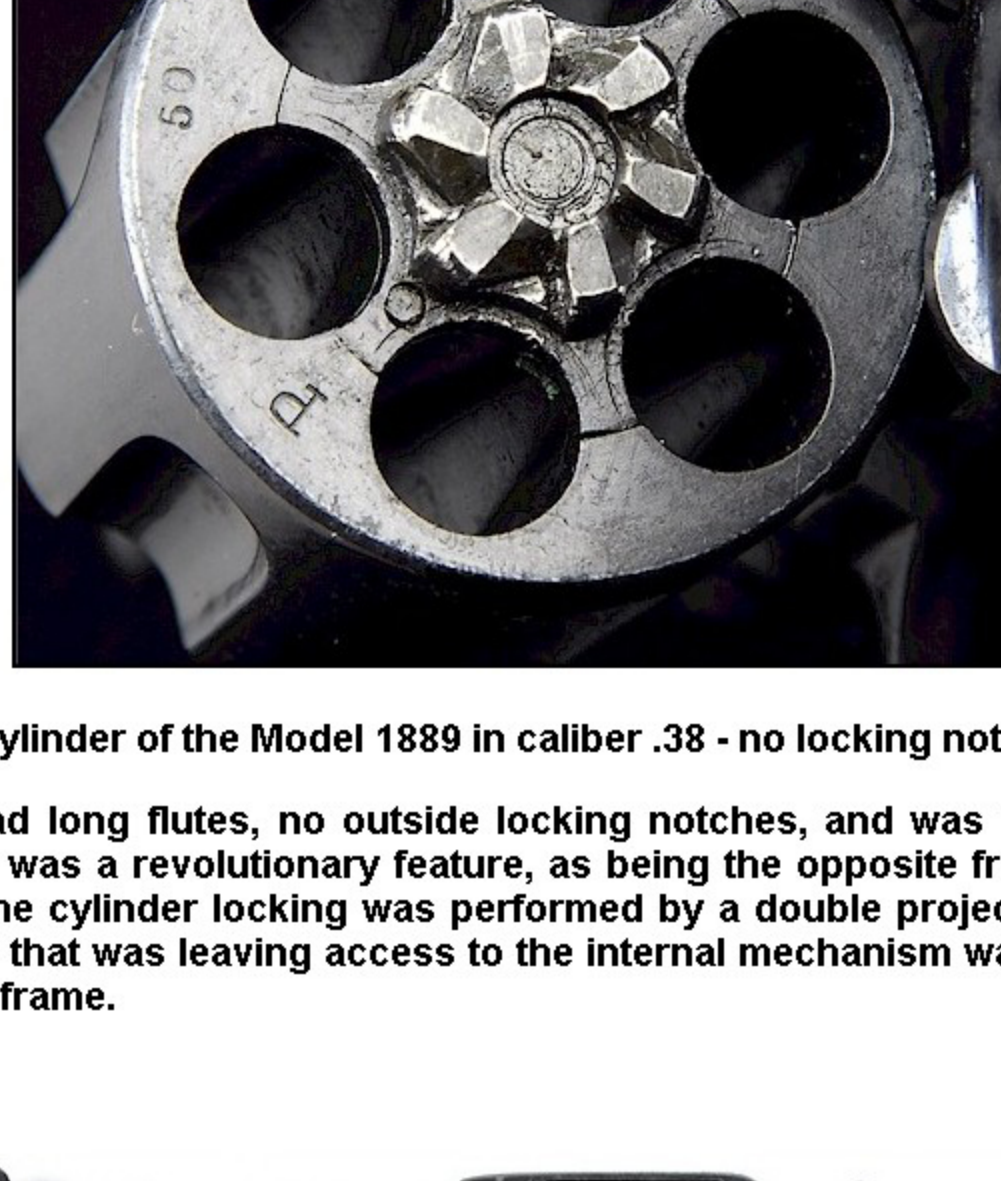
The key patent upon which evolved all subsequent Colt double-action, swing-out revolvers, was patent 392,503 November 6, 1888 granted to Carl Ehbets.

Colt "New Army & Navy" DA revolvers

The production of the Colt swing-out cylinder double action revolver begun in 1889. These early models were equipped with the same cylinders as those found in the "Lightning" model.

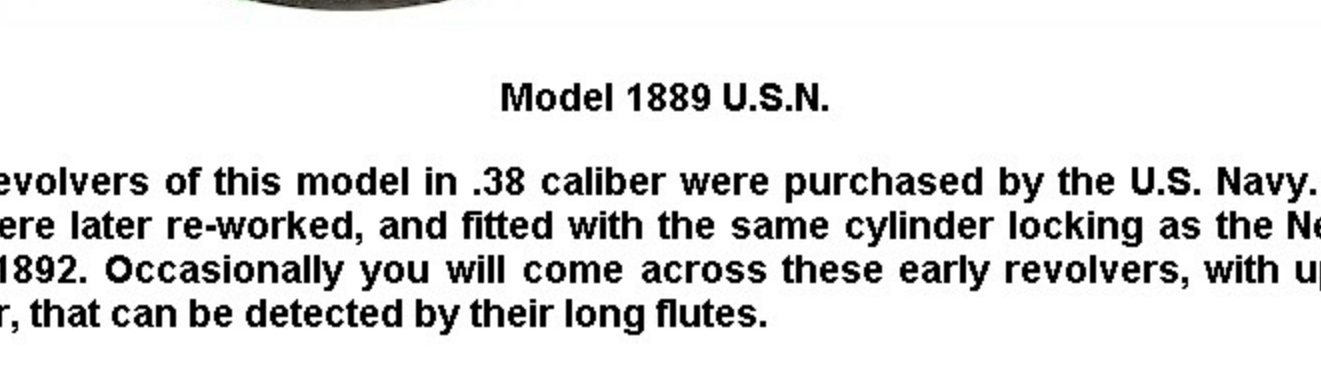


EARLY COLT MODEL 1889 DA REVOLVER - SN 50. Cal. 38



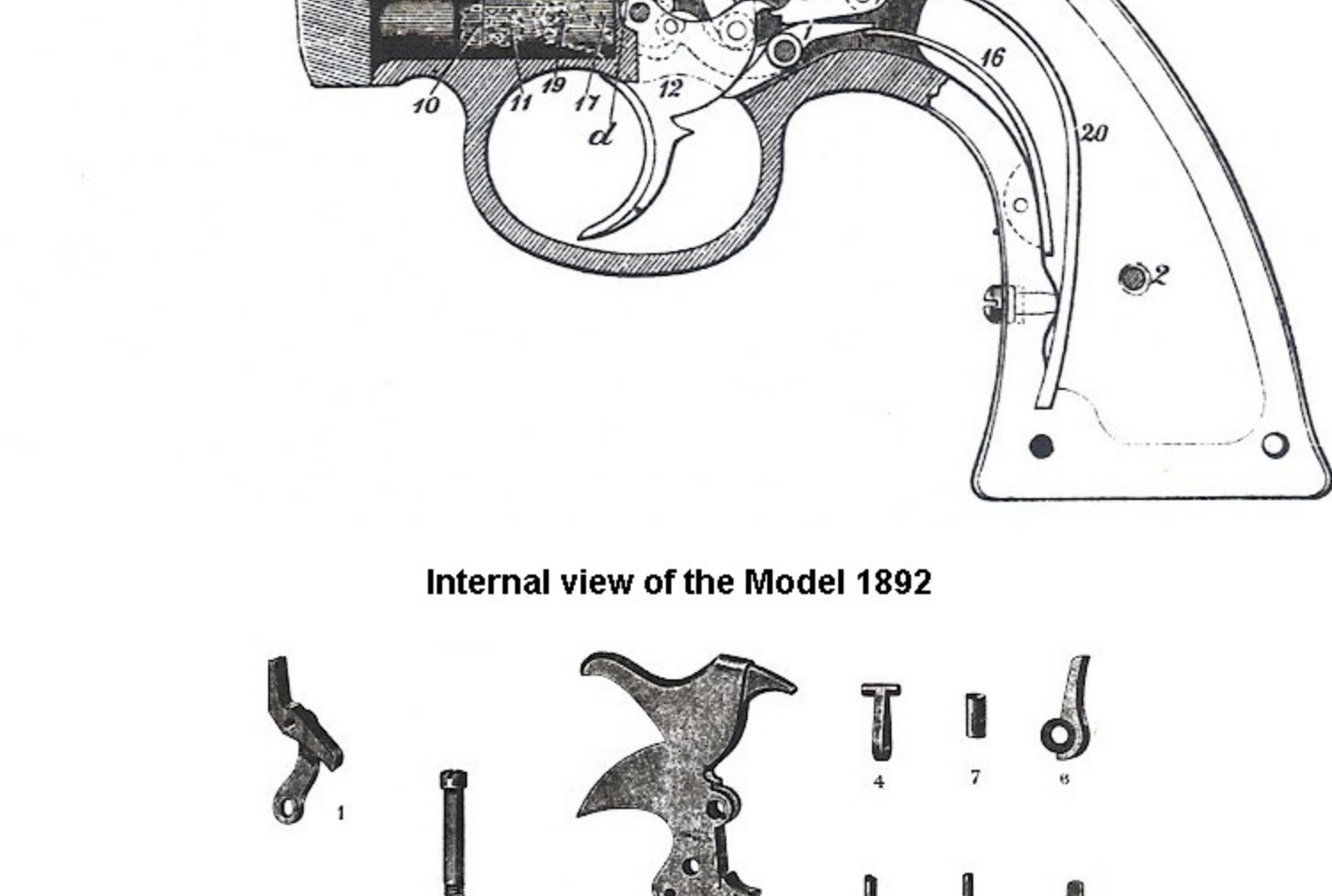
Cylinder of the Model 1889 in caliber .38 - no locking notch

The cylinder had long flutes, no outside locking notches, and was rotating counter-clockwise. This was a revolutionary feature, as being the opposite from all preceding Colt designs. The cylinder locking was performed by a double projection of the pawl. The cover plate that was leaving access to the internal mechanism was located on the right side of the frame.

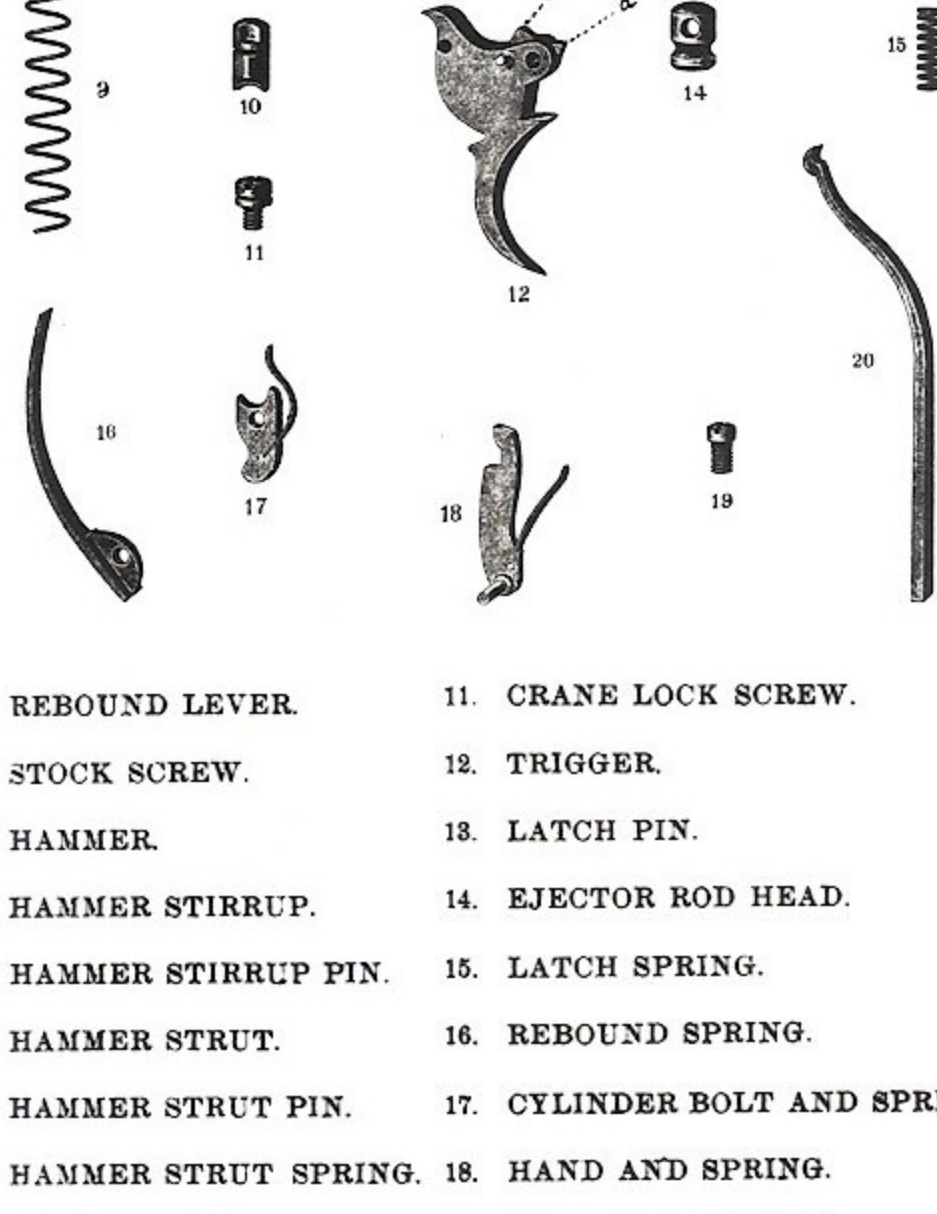


Model 1889 U.S.N.

5,000 revolvers of this model in .38 caliber were purchased by the U.S. Navy. Most of them were later re-worked, and fitted with the same cylinder locking as the New Army Model 1892. Occasionally you will come across these early revolvers, with upgraded cylinder, that can be detected by their long flutes.

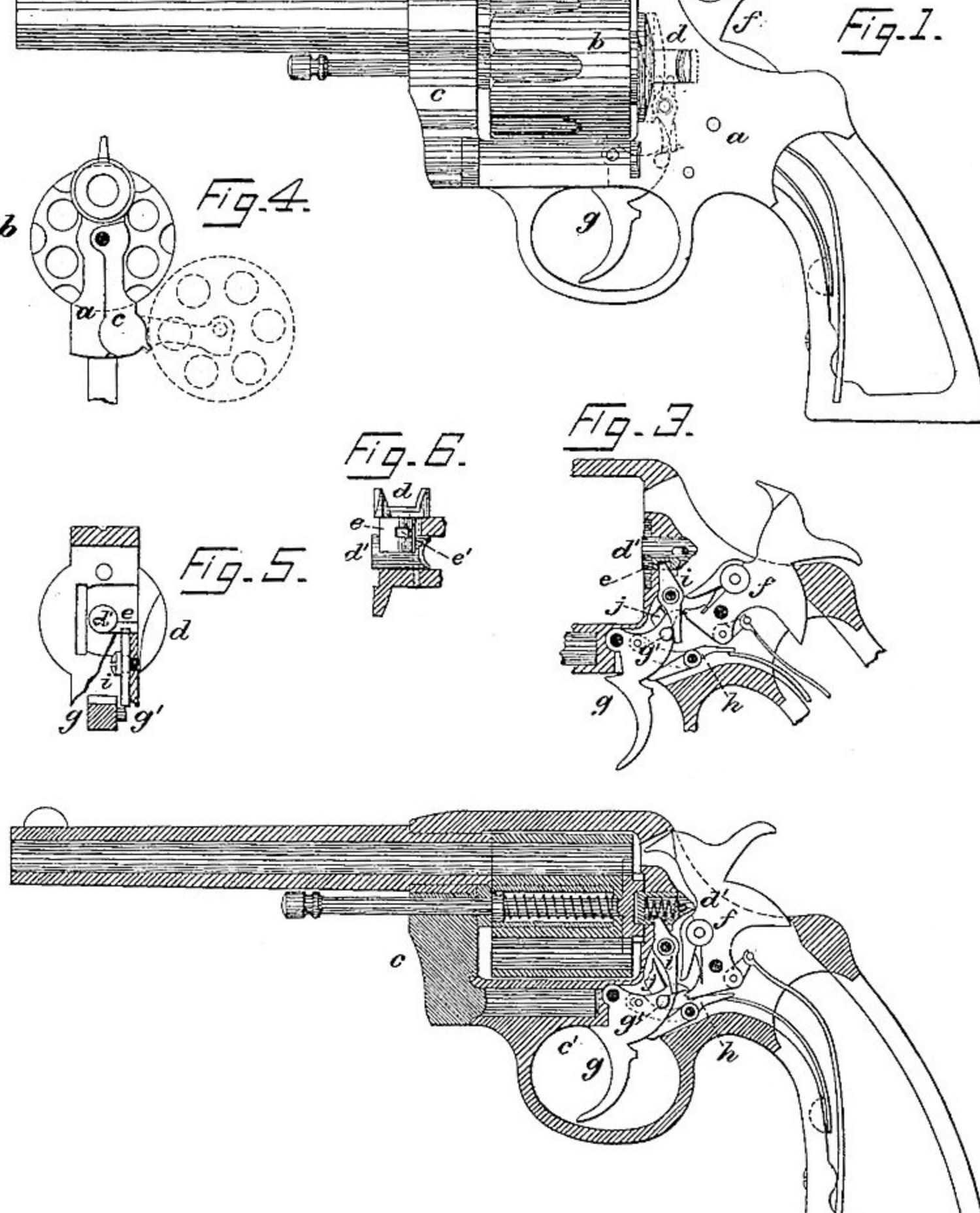


Internal view of the Model 1892



In 1892, Colt received an order for 5,000 revolvers. This "New Army" model of 1892, like the Navy Model 1889, had a counter-clockwise cylinder rotation, but the cylinder locking was performed by a new spring-loaded part (17 above) carried by the forward section of the trigger.

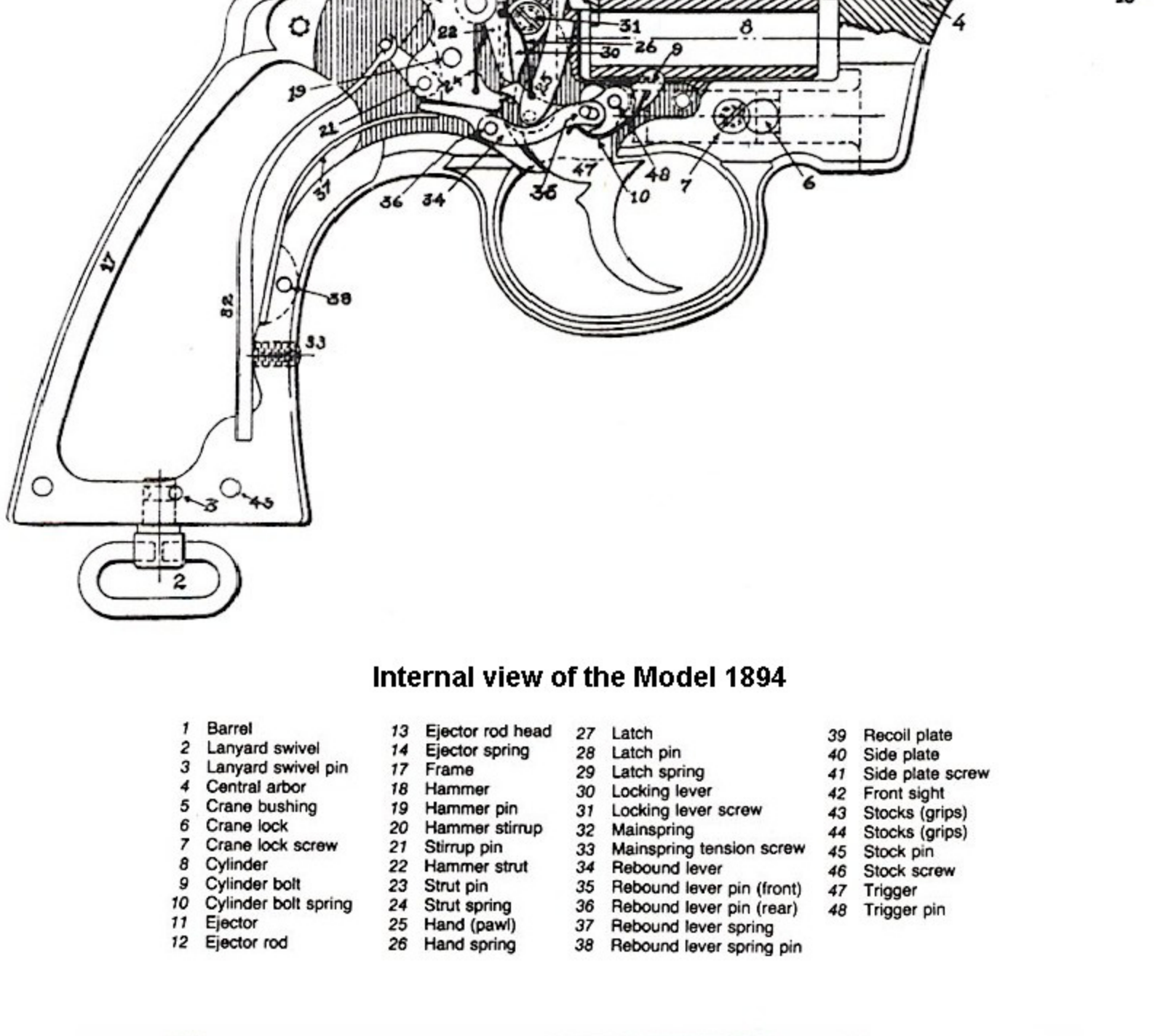
With use a serious problem appeared: The hammer could be dropped when the cylinder was not fully swung home into the frame. And the problem was partly aggravated by the counter-clockwise rotation of the cylinder. Since this tended to unseat the cylinder when this one was not properly seated.



F.B. Felton's US patent 535,097 March 5, 1895

The problem was solved by adding a safety lever (i) installed into a vertical groove milled into the left-hand side of the frame. The safety lever was actuated by the cylinder latch pin (d'). When the cylinder was not fully closed, the cylinder latch pin made the safety lever lower end tilt slightly toward the front, and cut the path of the pawl's pivot (g') that was projecting on the left side of the trigger. The result was the trigger being blocked as shown in figure 3 above. So the weapon could not be thumb cocked or discharged by pulling the trigger.

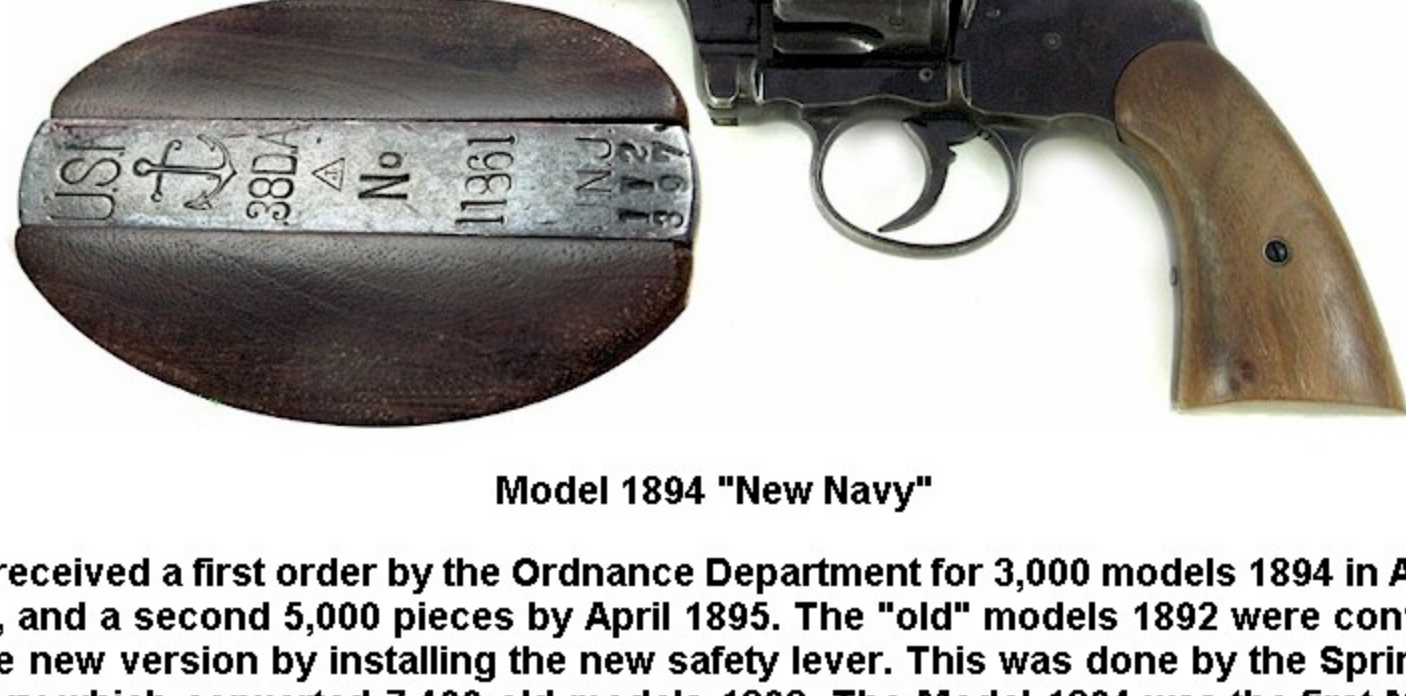
This modification was realized by F.B. Felton, who was granted patent 535,097 on March 5, 1895 for it. The Patent being assigned to Colt.



Internal view of the Model 1894

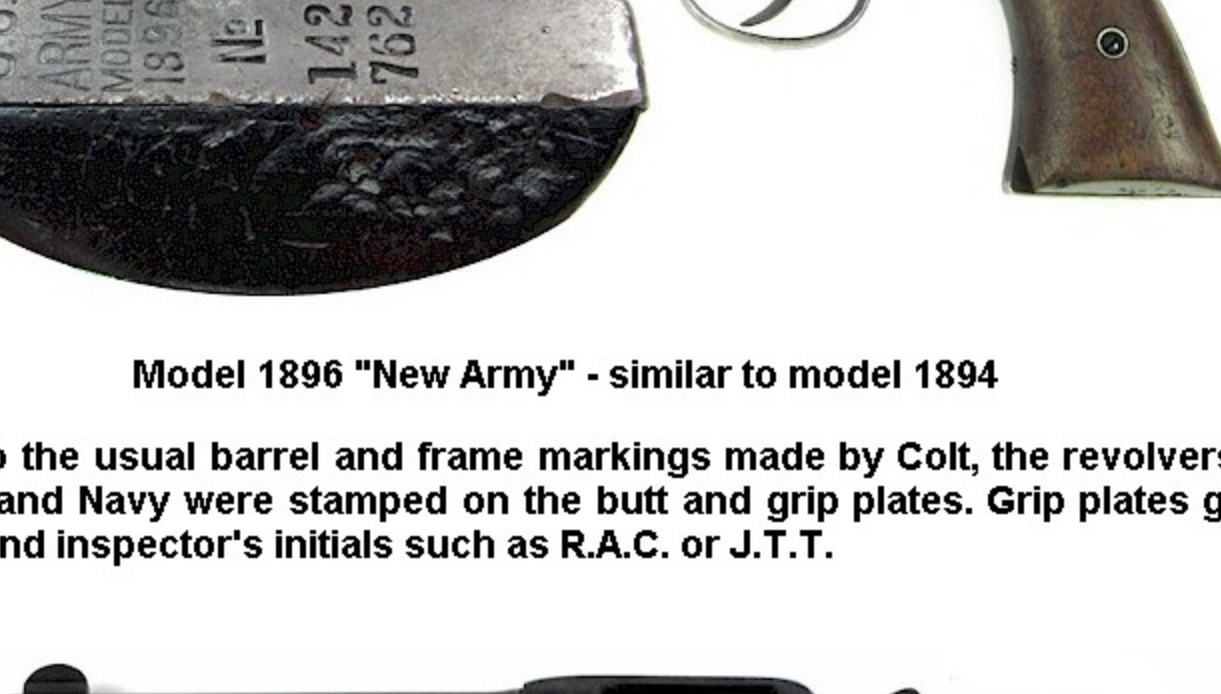


Model 1894 "New Army"



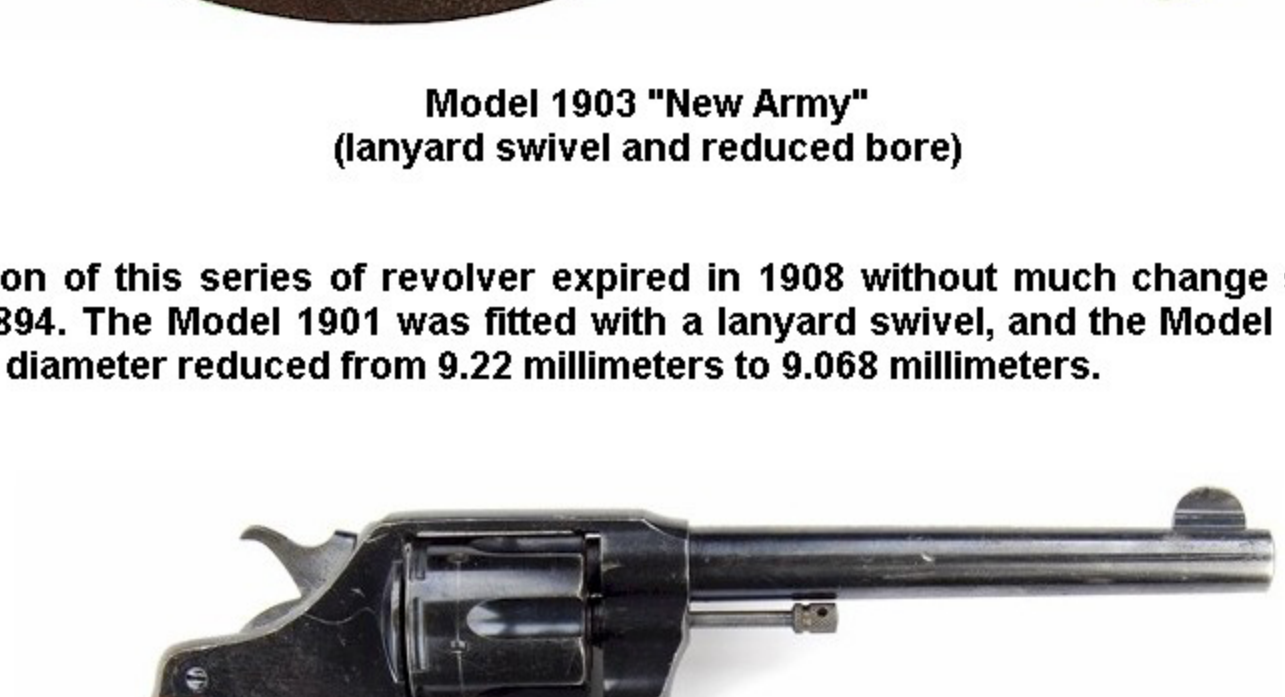
Model 1894 "New Navy"

Colt received a first order by the Ordnance Department for 3,000 models 1894 in August 1894, and a second 5,000 pieces by April 1895. The "old" models 1892 were converted to the new version by installing the new safety lever. This was done by the Springfield Armory which converted 7,490 old models 1892. The Model 1894 was the first Military handgun for which smokeless cartridges were specified.



Model 1896 "New Army" - similar to model 1894

In addition to the usual barrel and frame markings made by Colt, the revolvers issued to the Army and Navy were stamped on the butt and grip plates. Grip plates generally bear a date and inspector's initials such as R.A.C. or J.T.T.



Model 1903 "New Army"
(lanyard swivel and reduced bore)

Production of this series of revolver expired in 1908 without much change since the Model 1894. The Model 1901 was fitted with a lanyard swivel, and the Model 1903 had the bore diameter reduced from 9.22 millimeters to 9.068 millimeters.



Colt Model 1905 Marine Corps revolver
SN USMC No. 773 / Colt No. 551

In 1905, the Marine Corps adopted a variant of the standard "New Army" Model. Mechanically speaking the Marine Model was similar to the "New Army" and "New Navy" Model if we except the more rounded shape of the butt. Manufacture began in 1905 and discontinued in 1908. Volume was therefore not great and such item is now highly prized.

Colt "New Service" DA revolvers

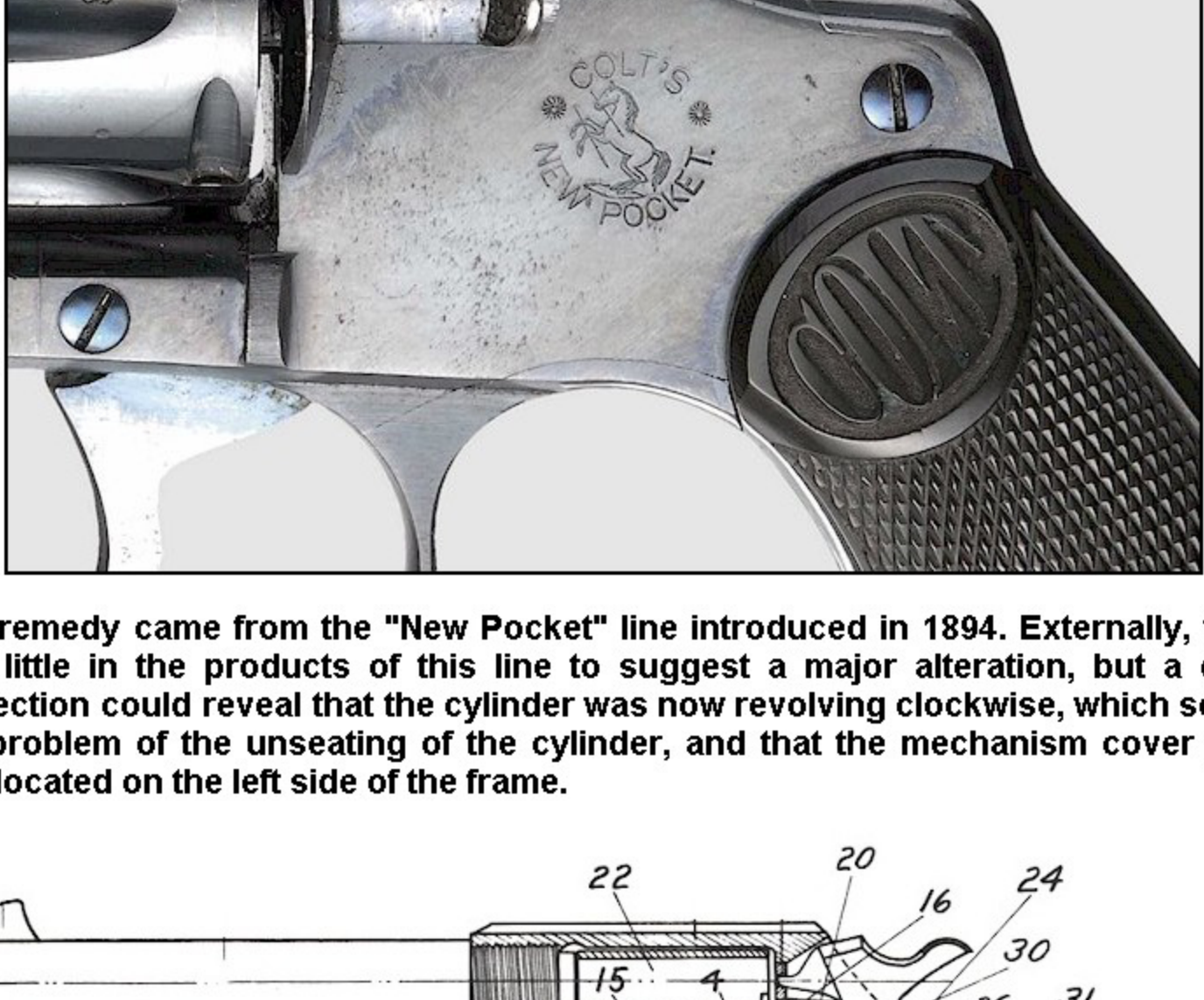
By the mid of the 1890s, questions were raised about the durability of the "New Army" revolvers due to their relatively complicated mechanism, that required greater care than the old single-action revolvers. Complaints were also put forth about to the .38 caliber, that was often considered inadequate for efficient cavalry service. There was even some concern about the real merits of the double-action, swing-out cylinder, system itself, when considering the increase of apparent fragility.

Colt realized by itself that the "New Army" design contained a number of mechanical flaws that could lead to the damage of the lock if the arm was handled by inexperienced hands. Among the shortcomings considered was the counter-clockwise rotation of the cylinder.

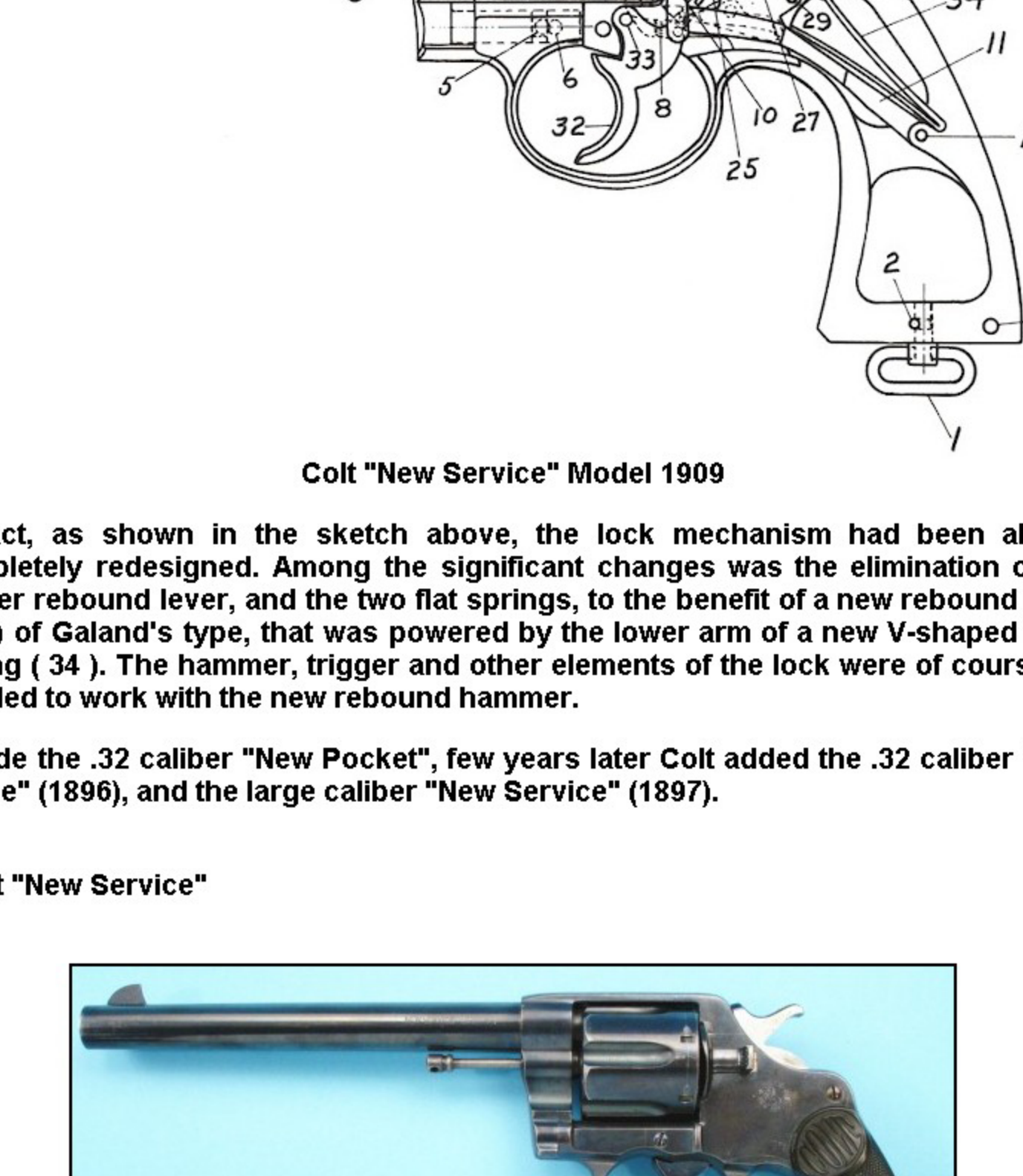
- Colt "New Pocket"



Colt "New Pocket" - 1897
Caliber .32 Colt - serial # 9905



Pat. Aug. 5, 1884 & Nov. 6, 1888

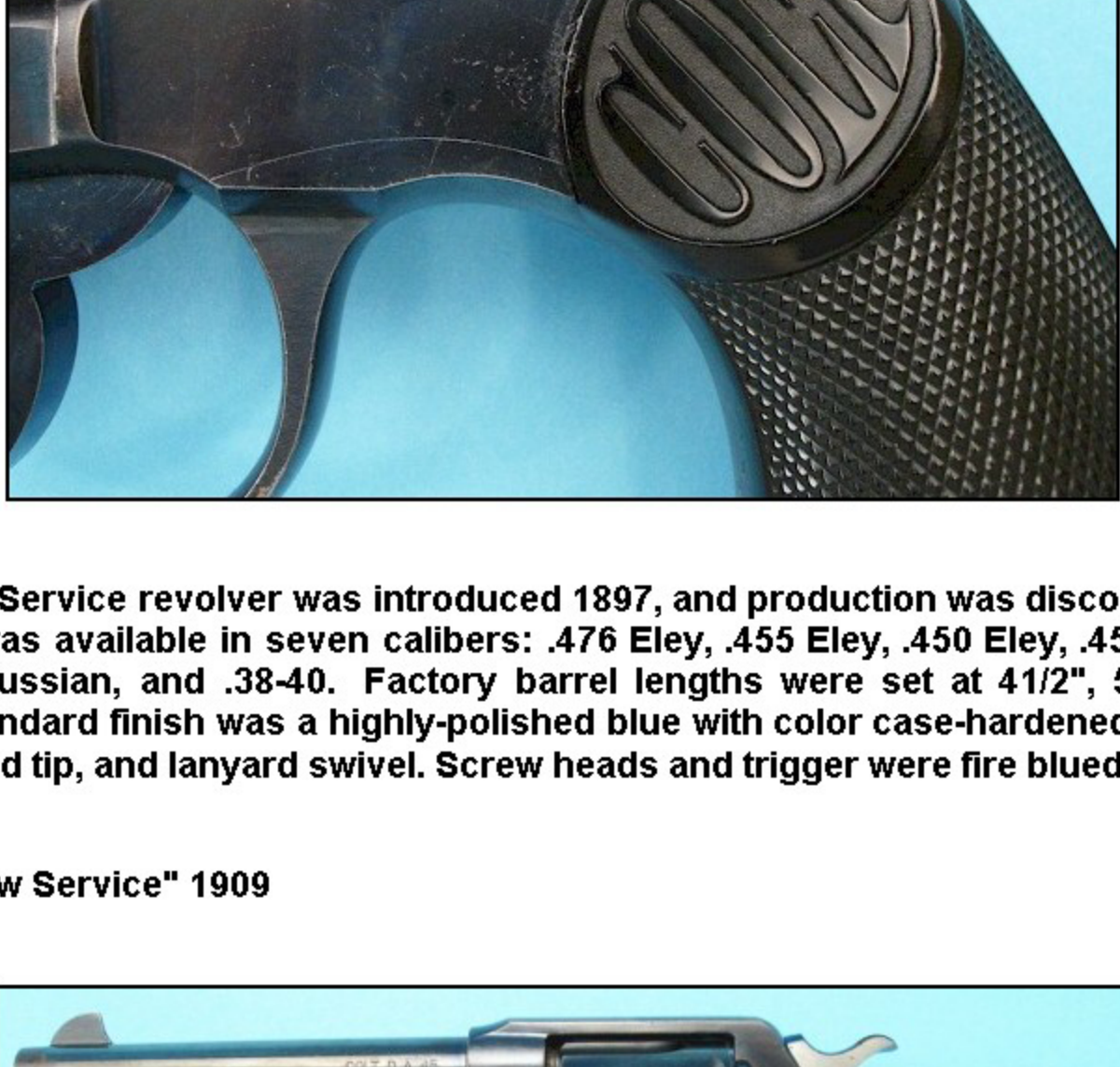


Colt "New Service" Model 1909

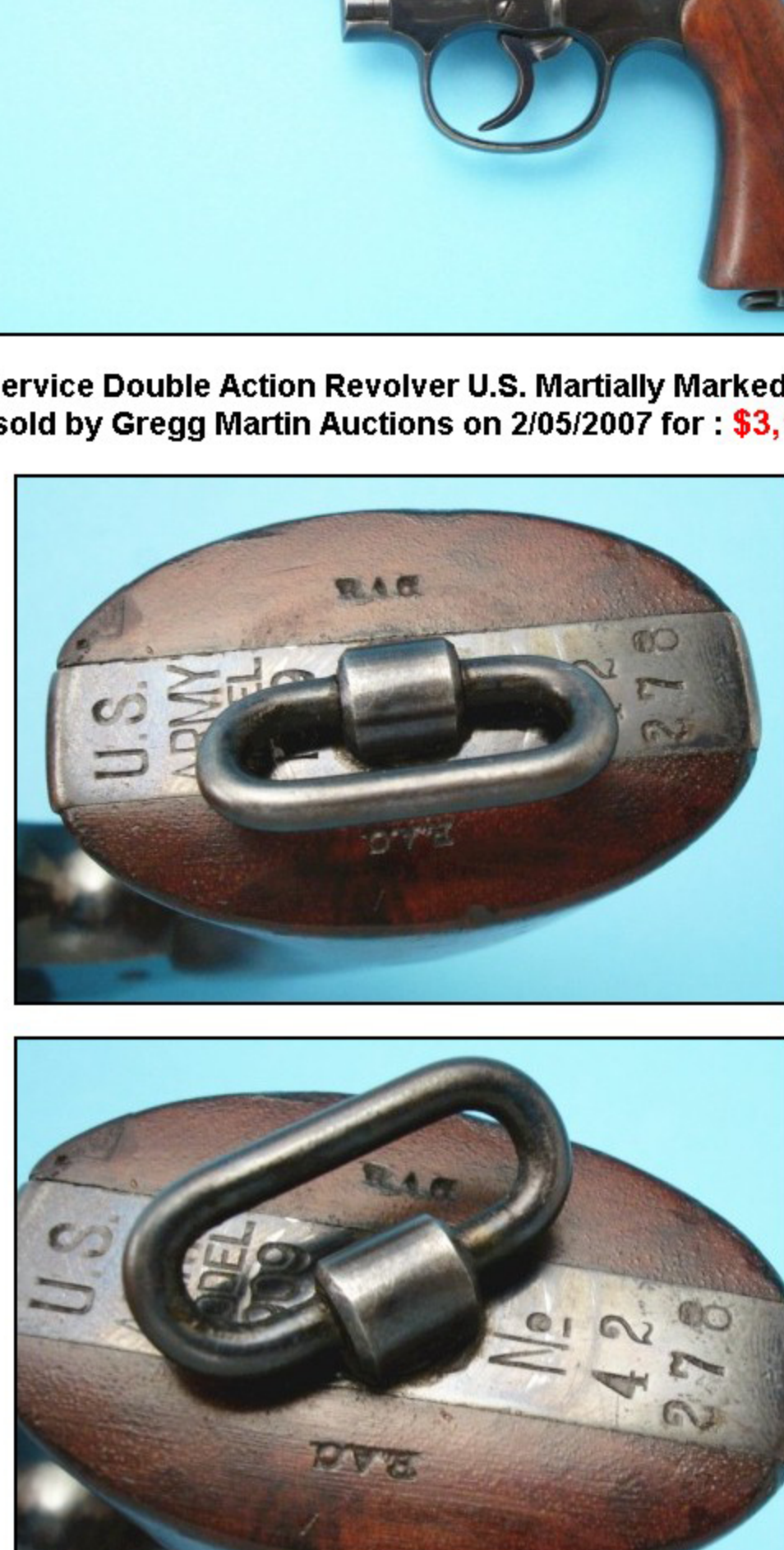
In fact, as shown in the sketch above, the lock mechanism had been almost completely redesigned. Among the significant changes was the elimination of the former rebound lever, and the two flat springs, to the benefit of a new rebound lever (11) of Galand's type, that was powered by the lower arm of a new V-shaped main spring (34). The hammer, trigger and other elements of the lock were of course re-profiled to work with the new rebound hammer.

Beside the .32 caliber "New Pocket", few years later Colt added the .32 caliber "New Police" (1896), and the large caliber "New Service" (1897).

- Colt "New Service"

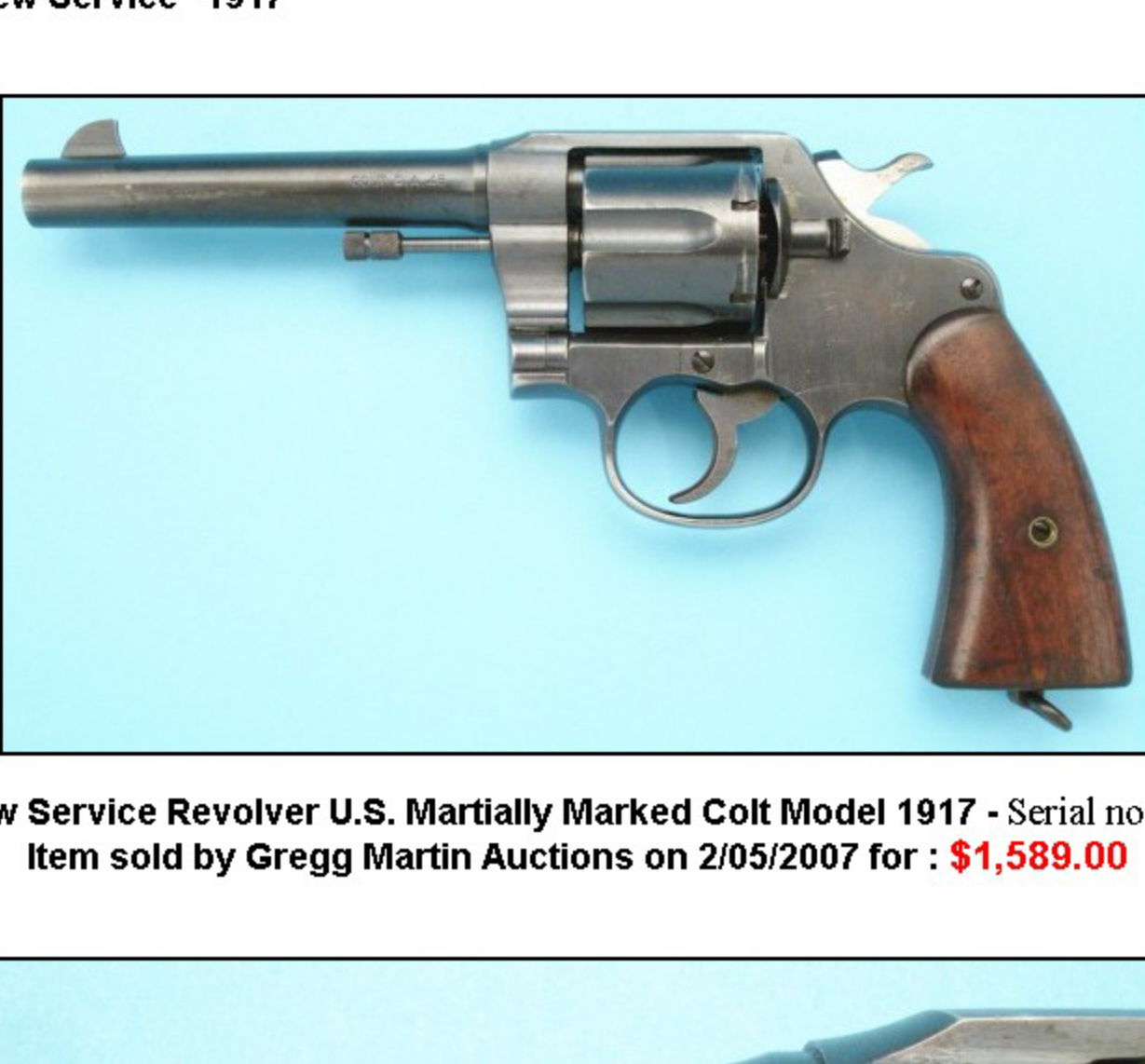


Colt New Service Double Action Revolver .44-40 caliber 7 1/2-inch barrel

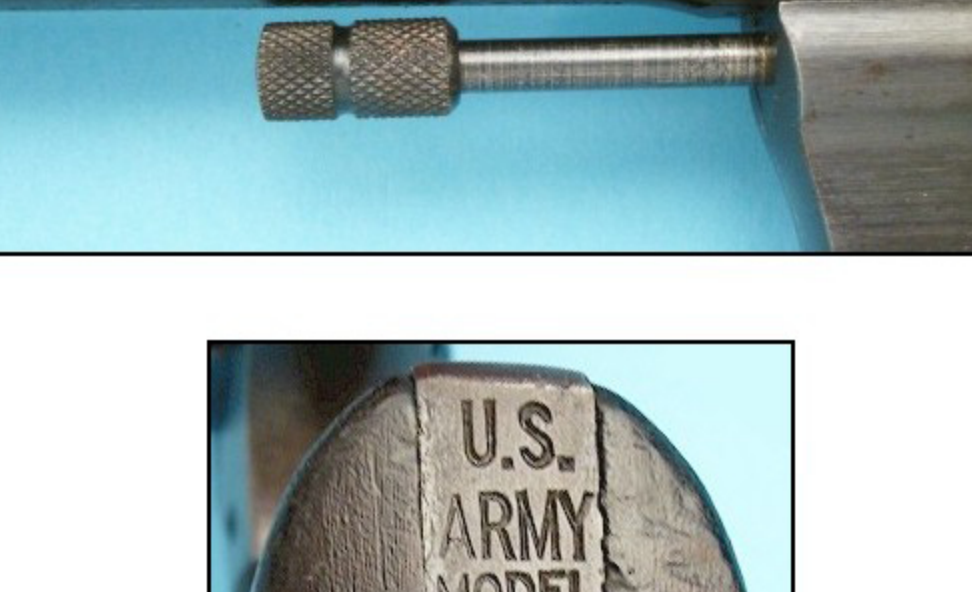


The New Service revolver was introduced 1897, and production was discontinued in 1943. It was available in seven calibers: .476 Eley, .455 Eley, .450 Eley, .45 Colt, .44-40, .44 Russian, and .38-40. Factory barrel lengths were set at 4 1/2", 5 1/2", and 7 1/2". Standard finish was a highly-polished blue with color case-hardened hammer, ejector rod tip, and lanyard swivel. Screw heads and trigger were fire blued.

- Colt "New Service" 1909



Colt New Service Double Action Revolver U.S. Martially Marked Model 1909
Item sold by Gregg Martin Auctions on 2/05/2007 for : **\$3,121.25**



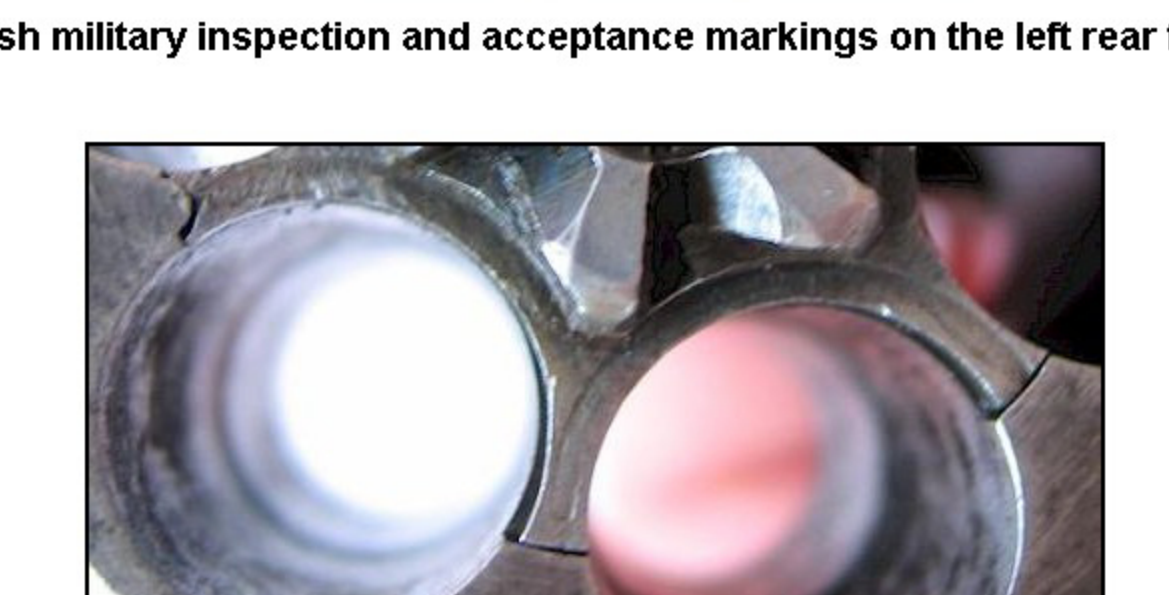
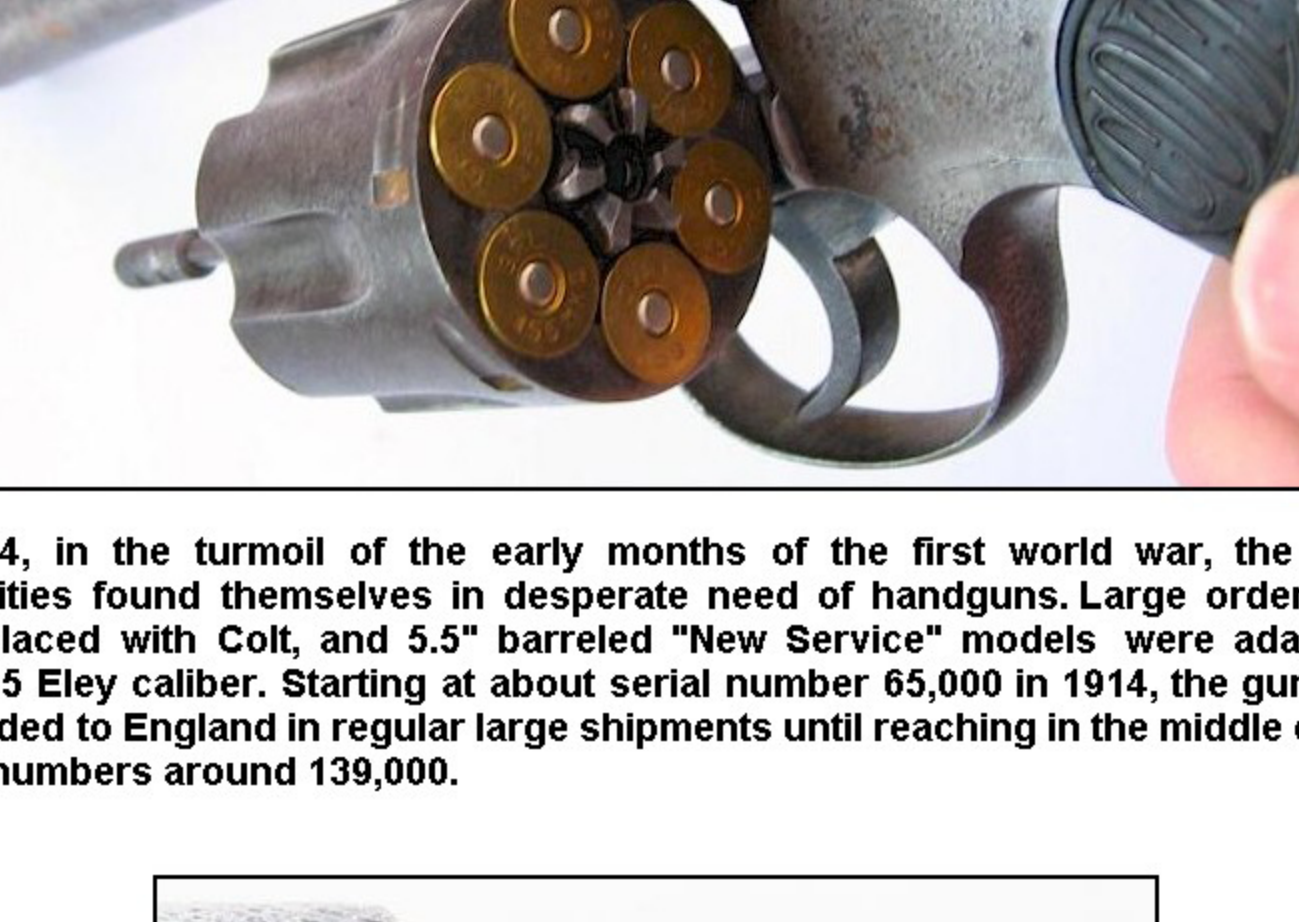
Serial no. 42278, .45 caliber, 6-inch barrel with standard maker, Hartford and patent dates double line address marking; U.S. stamped on butt, with standard Model 1909 and number markings; rampant colt and C on sideplate; blue finish; oil-finished walnut grips. RAC on butt of each grip panel; right side of frame with R.A.C. stamping (near hammer); F.B. on top left of right side of frame (forward of hammer).

The Model 1909 had an improved version the original New Service lockwork. The small leaf spring of the hammer strut was replaced by a small coil spring. The pivoted fly at the right side of the rebound hammer, used to actuate the cylinder bolt, was eliminated to the benefit of a lateral extension integral with the lever. The most important improvement was no doubt the addition of the "Colt Positive Safety". The New Service frames were altered to accept these improvements at approximately serial number 21,000. The patent date for the positive lock, July 4, 1905, was added to the barrel legend at this time. Other improvements were also added from 1909 on. The trigger guard was made wider. The bottom of the crane hinge was covered to protect it against dents. The grip frame was strengthened by adding a cross-piece between the grip straps. Note that the ejector rod knobs vary in having two or three checkered collars.

- Colt "New Service" 1917

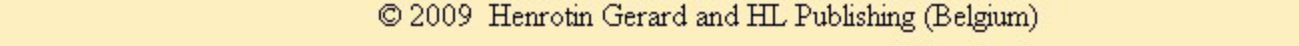


Colt New Service Revolver U.S. Martially Marked Colt Model 1917 - Serial no. 223819
Item sold by Gregg Martin Auctions on 2/05/2007 for : **\$1,589.00**



The "New Service" Model 1917, probably the best known version of this line, had a cylinder modified to chamber the semi-auto pistol cartridge .45 ACP. The case of this cartridge being not produced with a rim, two semi-circular clips were created to hold three cartridges each. This shrewdness allowed the use of same ammunition in the Colt Model 1911 semi-auto pistol, and in the Model 1917 revolver.

- Colt "New Service" for the British Army



British "New Service" revolver - serial #104,221

In 1914, in the turmoil of the early months of the first world war, the British authorities found themselves in desperate need of handguns. Large orders were then placed with Colt, and 5.5" barreled "New Service" models were adapted to the .455 Eley caliber. Starting at about serial number 65,000 in 1914, the guns were forwarded to England in regular large shipments until reaching in the middle of 1917, serial numbers around 139,000.

British military inspection and acceptance markings on the left rear frame

British proof marking on cylinder rear

British proof marking on breech area

Colt was to manufacture upwards of 55,000 .455 New Service revolvers for British and Commonwealth armed forces. The majority of them bears broad arrow government acceptance markings, as well as various inspection and proof marks.